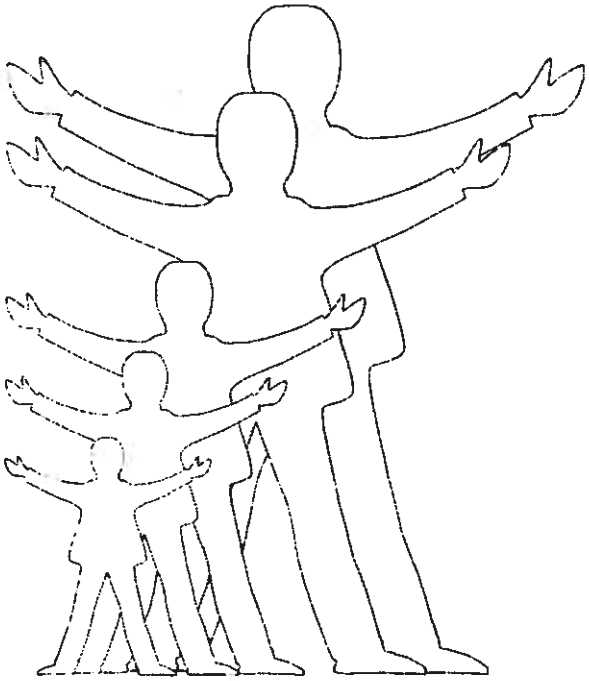
MANAGING MEDICATIONS

IN DEVELOPMENTAL DISABILITIES PROGRAM-FUNDED SERVICES



A SELF-PACED INSTRUCTIONAL MANUAL

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1998 Written by William J. Docktor. Assistance provided by Perry Jones.

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I. INTRODUCTION

A. PURPOSE:

This manual is designed to inform and train staff who assist and supervise in the self-administration of medications by persons with developmental disabilities. It is intended to teach you enough to recognize problems when they occur and to know what actions to take in response to these problems. The manual is also intended to provide an understanding of the responsibilities of service consumers in taking medications and to help you teach such responsibilities to these persons. It **does not**, nor can it, include everything you will need to know.

Let's talk about some terms before we go any further. The first paragraph contains two phrases which will have irritated some people: "persons with developmental disabilities" and "service consumers." No negative connotation was intended. Many other terms have been used over the years such as consumer, customer, the developmentally disabled, developmentally challenged, and service recipient. The term patient is used in medical circles. The terms individual and person are less specific. Not everyone agrees on which term is best, but we must have a term to refer to this group of individuals. The preferred term changes with time. After much discussion, we have selected "consumer" as the currently most accepted term, but have mixed in person and individual to avoid excessive redundancy. In a few years this term may have negative connotations. Please realize that no negativism is intended.

A companion volume, *The Essential Guide to Prescription Drugs,* by James J. Rybacki, Pharm.D. and James W. Long, M.D., (Harper Collins Publishers Inc., 10 East 53rd Street, New York, NY 10022) is suggested. This book contains more detailed information on each specific medication and tables which will supply most of the drug information . This manual is intended to supplement the book. This manual refers the reader to *The Essential Guide to Prescription Drugs* rather than repeat specific drug information. This manual will also follow the terminology and classification used in *The Essential Guide to Prescription Drugs,* to the extent possible.

These two resources will supply you with the basics of the process of drug therapy, but pharmacotherapy (i.e. drug therapy) is a complex and ever changing art. You will need to supplement these resources with continuing study and by seeking help from pharmacotherapy experts if you are to serve people with developmental disabilities well.

After studying this manual you must pass a written test to become medication certified. This test is based on this manual.

B. HOW TO USE THIS MANUAL:

This manual is designed to be self-instructional; that is, it is intended to be used by yourself both as the **teacher** and the **learner.** Each of the sections contains specific information followed by questions to check on what you have learned. The questions are true/false, matching, and fill-in-the blank. Answers for these questions are located in the appendices at the end of this manual.

Carefully **read** the information in each section and then **write** your answers to the section questions on a separate piece of paper. (We encourage you to write your answers on separate paper, because that will allow others to take the tests without your answers being visible.) Check your answers with those on the section answer page. If you are sure you have learned all of the important information, then move ahead to the next section. If you miss any questions or do not understand them, **reread** the appropriate material in that section and test yourself again before proceeding.

CHAPTER EXAM
I. INTRODUCTION

1. True or false. This book includes everything you will need to know about these subjects.

2. The companion volume of this book is entitled _____.

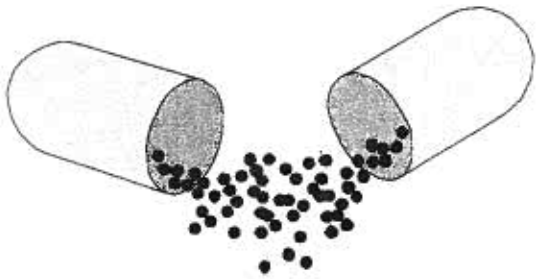
3. After studying the material you must _____ to become medication certified.

4. This manual is designed to be _____.

5. It is intended to be used by yourself both as the _____ and the learner.

6. If you miss the answer to one of the questions, you should _____.

7. Even if you master the content of this manual, you will still need to continue to consult with _____ for more specific information.



II. OTHER SOURCES OF INFORMATION

This manual cannot possibly provide all of the information about medications you will need to know. It is not intended to do so, nor would it be possible. It is intended to provide:

- general background information on drugs;
- guidelines for medication procedures for you as a care giver for individuals with developmental disabilities;
- some specific information about specific groups of medications most commonly used by consumers; and
- drug information which is specific to consumers.

There are, however, several good resources available to you. The companion volume, *Essential Guide to Prescription Drugs*, provides more detailed information about specific medications. There are also several good publications available for the layperson. One of these is the *United States Pharmacopeia Dispensing Information, Volume II, Advice for the Patient.* For order information, contact the United States Pharmacopoeial Convention, Inc., 12601 Twinbrook Parkway, Rockville, MD 20852, (301) 881-0666. It is also available from the Training Resource and Information Center/Parents Let's Unit for Kids (TRIC/PLUK) library in Billings (1-800-222-7585, ask for the librarian; 1500 North 30th Street, MSU-Billings, Billings, MT 59101). This book is published annually and has several updates during the year. It contains information on almost every drug marketed in the USA, is written in lay language, and provides the needed information for the safe and effective use of medications.

When using these books, one must remember that writing about highly technical, scientific information in lay terms is a task which is challenging in the extreme. You may find some of the information confusing or difficult to understand. Some information may even seem to contradict itself. It is for these reasons that professional people are your most reliable and best source. A conversation which allows clarification of statements and answers to questions allows for more extensive and more effective communication.

Your pharmacist is probably the most readily available, knowledgeable person who can answer questions about the purpose, side effects, toxicities, method of administration, duration of therapy, and drug-drug or drug-food interactions. You probably have professional contact with the pharmacists who supply your medications. They are often available by telephone. Pharmacies are often

open into the evening hours and on weekends; some of the larger hospitals have pharmacists on duty twenty-four hours a day. Some pharmacies also have emergency numbers for after-hours.

A physician or registered nurse can also address many of these questions. Sometimes the physician is busy and difficult to reach, but most have some kind of call system for emergencies. Many of you may know nurses who work with you and your consumers who may be tapped for information.

CHAPTER EXAM
II. OTHER SOURCES OF INFORMATION

8. This manual is intended to provide (four things):
   _____
   _____
   _____
   _____

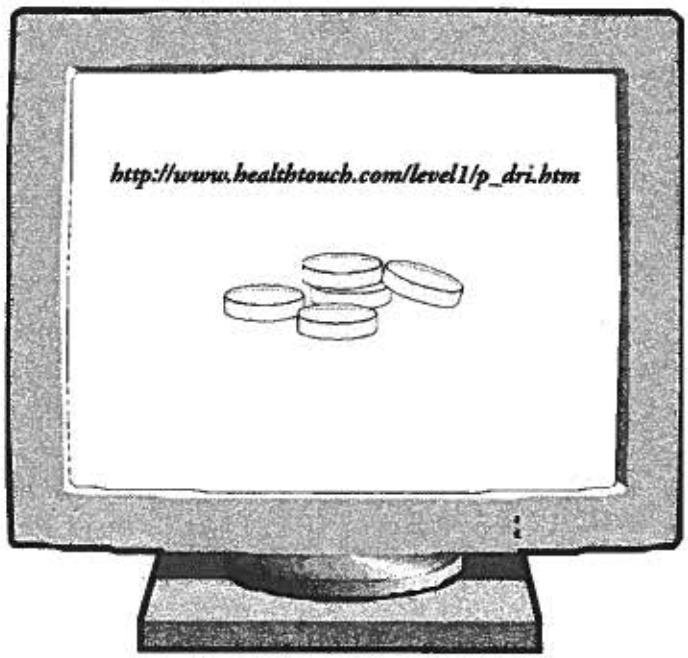
9. Your _____ is probably the most readily available, knowledgeable person who can answer your questions.

10. A professional who can provide knowledge about drugs and side effects is a _____.

A useful source of updated information regarding new meds is available at the following website:

http://www.healthtouch.com/level1/p_dri.htm

This website cannot be considered as a complete source for specific drug information. Listings for medications do not include all intended uses or known side effects. Some information may be difficult to understand. If you have questions or concerns about a medication, you should always talk to a medical professional.



III. THE ROLE OF THE CARE GIVER IN DRUG THERAPY

An active drug in its final dosage form is called a pharmaceutical. The term pharmaceutical is derived from the Greek word *pharmakon* which was used to refer to both a medicine and a poison. This should help remind us that drugs are two-edged swords. When used appropriately they can relieve the signs and symptoms of disease leading to relief of suffering. But when used carelessly, drugs can be toxic, producing mental and/or physical distress or even death.

Even when used properly, the response to medication is not predictable. Medications are taken to obtain a therapeutic effect. Unfortunately, no medication has only one effect. The unwanted effects are called side effects, adverse reactions or untoward effects. Therefore, every time a medication is taken, it should be considered an experiment. As with any experiment, the outcome of drug therapy must be observed carefully and documented.

Your role as a care giver is to assist the consumer with taking his/her medication. Your role is two fold. You are teaching or training the consumer to take his/her medication properly. You are also responsible for the consumer's proper administration of medication as prescribed. The first several sections of this manual deal with your responsibility for the proper administration of medication. The last section, "Teaching Self Medication," deals with training.

The wise use of medication requires an accurate diagnosis, an accurate perception of the medical and psychosocial condition of the patient, thorough drug knowledge and methodical, dedicated monitoring. These things are primarily the responsibility of the medical professionals. You, as a CARE GIVER, can be of great assistance to these individuals.

It is often said that 90% of diagnosis is understanding the patient's medical history. Some consumers are unable to provide this history in great detail to the physicians, pharmacists and nurses. So you must. Some things are obvious, such as allergies to medications. Others may not be quite so apparent. For example, knowing that a person has frequent problems with constipation may influence the prescriber's decision about which antidepressant is most appropriate for this individual. Other examples might be:

- a person with difficulty swallowing needing a different dosage form of the drug;
- a patient who would not be able to cooperate with having eye drops administered; or

- an individual with a past history of picking at their stool may not be the most appropriate candidate for suppositories.

Medical professionals need a list of all the medical problems and psychosocial diagnoses, past surgeries, allergies, medications (prescription, nonprescription and health foods or supplements), any physical or mental limitations, and an accurate description of the current problem.

With follow-up visits, the physician will be evaluating the response to medication and deciding whether to continue, change dosage or change drugs. It is difficult to get an accurate picture of the person in a fifteen minute contact in a physician's office. You, the CARE GIVER, spend many hours with the person each day. You must help the medical professionals obtain an accurate assessment of the response to medication. Be prepared to describe the changes in the signs and symptoms presented by the patient, any side effects or any problems with administration. One side effect, the significance of which is often overlooked, is sedation. The prescriber may not be aware of the interference this may cause with training programs. The advantages or therapeutic effects of medication must always be balanced with the disadvantages or adverse effects.

CHAPTER EXAM
III. ROLE OF THE CARE GIVER IN DRUG THERAPY

11. An active drug in its final dosage form is called a _____.

12. The term pharmaceutical is derived from the Greek word *pharmakon*, which was used to refer to both a _____ and a _____.

13. Medications are taken to obtain a _____ effect.

14. The unwanted effects of a drug are called _____.

15. Your role as care giver assisting with medication is to: *(circle all correct answers)*

    a. Train the consumer to take his/her medication properly.
    b. Prescribe medication.
    c. Assure medication is taken properly.
    d. Provide a list of psychosocial problems to the physician.

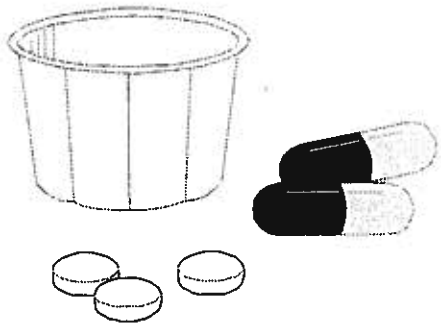
IV. MEDICATION USE

A. PURPOSES OF MEDICATION:

Medications or drugs are commonly used for therapeutic purposes in today's society. It is important to remember the goal or purpose of taking medication. Medications are rarely curative. Usually they are able only to eliminate symptoms of a disease, not eliminate the disease. For example, a decongestant can eliminate your runny nose, but it doesn't cure your cold. Anticonvulsants are used in the same way. They prevent the symptom—the seizure—but they do not cure the disease or disorder that causes the seizure.

B. GENERIC VS. BRAND NAMES:

Medications can be referred to by two names. The generic name can be used by any manufacturer and generally identifies the active ingredient in the drug product. The brand name (or trade name) can be used to refer only to the product of the company who registered the trade name. For example, soap (generic name) can refer to a variety of products you might see on the shelf. But Dial® is a specific product containing soap. Bayer® is a brand name; aspirin is a generic name. By convention, brand names are usually capitalized and identified with the registered trademark symbol "®." Throughout this manual, medications will be identified by both their generic names and brand names.



Many generic products are just as good as the brand name product, but are generally less expensive. Even when a prescription is written for a brand name, the pharmacist may substitute a generic medication if certain circumstances are met. The prescription will then be labeled with the generic name. If this creates any question about whether this is the same medication that was ordered, call the pharmacy and check the names.

C. OVER-THE-COUNTER VS. PRESCRIPTION:

Medications are also classified as either over the counter (OTC) or prescription only. OTC or nonprescription products may be purchased in pharmacies or certain other retail stores by an indi-

vidual without a prescription. Prescription only or legend drugs may only be purchased from pharmacies with a prescription from an authorized prescriber. These medications have a "legend" printed on the label: "Federal law prohibits dispensing without a prescription." You may not see this legend because the pharmacist usually repackages and relabels the medication for a specific person with instructions from the prescription.

This distinction is somewhat irrelevant in a community home setting. Because you are acting as a care giver, you may only administer medication with the order of a physician, whether the medication is OTC or prescription. The reasons for this are as follows: OTC medication is classified as such by the U.S. Food and Drug Administration (FDA) because the FDA has determined that it can be used safely and effectively for self-treatment by the average nonmedically trained person. Persons with developmental disabilities are not average nonmedically trained persons and cannot determine their own self-treatment. You are not medically trained so you cannot determine their medication needs. Therefore, only medically trained professionals can determine the medication needs of the persons you serve.

D. STORAGE OF MEDICATIONS:

Medications can break down if not stored properly. Medications also affect body function and can be harmful if not taken properly or if taken by someone other than the person for whom they were prescribed. There are three important factors which must be met when storing medication: environmental conditions, security/access, and convenience.

Medications are chemicals. Like all chemicals they may undergo chemical reactions or breakdown thus deactivating the drug. Conditions which promote chemical decomposition of most drugs include heat, moisture, light, air and time. How much each of these factors affects a medication depends on the specific chemical. Therefore, most medications should be stored in a cool (room temperature), dry, and dark place, unless otherwise directed. The bathroom medicine cabinet is the worst place to store medication as it is the most moist and warm place in the house.

The storage temperature of medication is a common issue. Store medications at room temperature (defined as 59°F to 86°F), although this varies with each medication. Some medication must be refrigerated. In general, freezing should be avoided, although there are exceptions.

"Dry" usually means avoiding moist, damp places such as bathrooms or near dishwashers. Medication containers are made of moisture impermeable material. Medication containers should be closed tightly after each use, especially during hot, humid weather.

Light can also deactivate some medications. Medication containers are usually opaque to prevent light from coming into contact with the medication.

Air contains oxygen. Oxidation is a chemical reaction which can inactivate some medications. Keeping the container closed tightly limits the exposure of the medication to oxygen.

Controlling exposure to heat, moisture, light and air can extend the life of medication, but chemicals eventually break down in time just as food spoils or bread molds. Medications have an expiration date. After this date, a new medication should be obtained.

If a medication requires special storage, your pharmacist should inform you and instructions will appear on the label. Otherwise, the following guidelines should be followed:

1. Keep all medications out of harm's way. Medication should be locked away from children and others who are not responsible.

2. Medication should be kept dry and cool. Store away from heat and direct sunlight.

3. Do not let liquid medications freeze.

4. Destroy all unused or outdated medication.

5. Always keep the lid on the medication container tightly closed.

CHAPTER EXAM
IV. MEDICATION USE 16 - 36

16. True or false. Medications or drugs are commonly used for therapeutic purposes in today's society.
17. True or false. Medications usually cure the disease for which they are prescribed.
18. What two names can medications be referred to as? _____ and _____.
19. The generic name refers to the _____.
20. The brand name refers to the _____.
21. True or false. A prescription must be filled with the brand name product if this is the name on the prescription.
22. True or false. Legend drugs may only be purchased from pharmacies with a prescription from an authorized prescriber.
23. OTC stands for _____ drugs.
24. True or false. It is sometimes all right to take pills prescribed to someone else for the same illness.
25. True or false. You may obtain and use OTC products for the consumers without a doctor's order.
26. The three important factors which must be met when storing medication: _____, _____, and _____.
27. List the five environmental conditions which promote chemical decomposition: _____, _____, _____, _____, and _____.
28. True or false. The medicine cabinet is the worst place to store medication.
29. In general, at what temperature should medicine be stored? _____.
30. What five guidelines should be followed for medication storage? _____, _____, _____, _____, and _____.
31. The active ingredient in any drug product is generally identified by the _____ name.
32. A particular drug product of a company is known by its brand name and identified by its registered _____.
33. True or false. The medicine cabinet is the best place to store medications.
34. True or false. It's a good idea to keep liquid medication in the freezer.
35. True or false. Heat or direct sunlight may harm medications.
36. True or false. It is permissible to use non-prescribed medications for consumers, as long as they can be purchased over-the-counter.

E. DESTROYING MEDICATIONS:

There are many situations in which there will be "left-over" medication. The medication may have gone out of date or been discontinued. Perhaps the dosage was changed, requiring a different size dosage form. Sometimes consumers move to other facilities leaving their medication behind. Whatever the reason, the medication must be disposed of properly. Medication should never be kept just in case it is restarted. It should never be used for another consumer. These things tend to lead to medication errors.

Probably the best way to dispose of unneeded medication is to return it to the pharmacy. They cannot reuse it so don't expect a refund. They can dispose of it properly. Alternatively, your facility should have policies guiding the disposal of left-over medications which have been approved by a nurse and a pharmacist.

F. ADMINISTRATION OF MEDICATIONS:

Each prescription has a label on which the pharmacist has typed the instructions for use. OTC medications have instructions for use on the label. Be sure you, as the responsible person, understand these instructions before leaving the pharmacy. If you first encounter the medication in your work setting, and do not fully understand the instructions on the label, call the pharmacy to get clarification.

When preparing to give or take medication, always check the label to make sure you have the correct container. Most clinicians use a three point check system. Read the label when you pick up the container, when you remove the medication, and when you replace the cap. "Read the label" means the patient's name, the name of the medication and the dosage. This triple check system helps to prevent errors.

Most medications are tablets or capsules. These are placed in the mouth and swallowed with water or some other liquid. It is best to drink a full glass (8 fl. oz.) of water (or other liquid, depending on the prescription) each time you take a tablet or capsule. These medications must be dissolved before they can be absorbed and fluid is required for this to occur. Taking sufficient fluid with medication also helps to minimize any stomach upset.

Sometimes medications are supplied as liquids. Check the label to see if it requires refrigeration or if it must be shaken before each use. Always use a medicine cup to measure liquid medications.

These are available at most pharmacies. Using a household teaspoon as a measuring tool is very inaccurate.

Many people have difficulty swallowing whole tablets and capsules or need dosage less than one tablet in size. Therefore, crushing tablets, emptying capsules or cutting tablets is commonly done and is acceptable for many medications. The crushed tablets or capsule contents are often mixed with food such as applesauce to allow them to be swallowed easily without a bad taste. Many tablets are scored (have an indented line across them) which allows them to be broken with the fingers easily. Cutting tablets which are not scored is most easily accomplished with a tablet cutter. Tablet cutters can be purchased at most pharmacies.

There are also many medications which cannot be cut or crushed. In general any medication which is extended release, sustained release, sustained action, slow release, time released, delayed release, repeat action, or enteric coated should not be cut or crushed, but there are exceptions. Whenever swallowing or odd dosages present a problem, the best thing to do is to call the pharmacy. Many medications come in liquid forms which solve the problem. If not, ask the pharmacist about cutting or crushing this specific medication. Never just assume it is acceptable to do this without checking. Sometimes a similar medication is available in a more convenient dosage form; the pharmacist can call the physician to see if this other drug could be used instead.

The terms "apply," "instill," or "insert" are used when a medication is to be used topically (i.e., on the surface) or non-orally. These products should not be swallowed. Be sure you, as the responsible person, understand these administration techniques before leaving the pharmacy so you can help teach the individual using the medication to use it properly. Some tips on how to administer some of these dosage forms are supplied in the appendix, "Instructions for Specific Dosage Forms."

The following are general guidelines for taking medications, which you should be following and teaching to those in your care:

1. Never take a medication in the dark. Turn on the light and read the name and directions on the label several times with each use. Many clinicians recommend reading the label three times: once when you pick up the container, again before you take the medication, and again before you put the container away.

2. Never take anyone else's medications.

3. Take exactly the amount prescribed for the length of time prescribed.

4. Many of the instructions used on labels are confusing. If you do not completely understand them, call your pharmacist and ask for clarification.

5. Each person should know the names of his/her medications and their intended use.

6. Never run out of medication before the prescribed length of time. Be sure to get a refill of the prescription before running out completely.

7. As the responsible person, be sure to accurately document after each dose that the person has taken his/her medication.

8. Make note of any adverse effects from the medication.

G. HOME MEDICATIONS:

Whenever a consumer is to be away from the facility on a home visit with family or friends or some outing, it is important that the medication go with the consumer. If there is sufficient time, the pharmacy should be requested to repackage and relabel the medication in sufficient quantity to last until the consumer's return. A patient information sheet about each medication should also be included.

Unfortunately, these events often happen suddenly, not allowing time for the pharmacist to repackage. In this case, copies of the prescription labels and information sheets should be provided to the family member or responsible person. The medication needed can be placed in med boxes by the consumer or family member. The care giver should review the medication instructions with the family member or responsible person to ensure they are understood.

Upon return, the family member or responsible person should be asked about medication. If any dosages were missed, this should be documented in the records.

H. NEW PRESCRIPTIONS:

Whenever conferring with a physician about a person, you should be sure to be aware of all the person's current medications and medical conditions (e.g., seizure disorder). Before leaving the physician's office and the pharmacy, you and, if he/she is present, the person for whom the prescription is intended should know the following information:

1. What is the purpose of this medication? What signs and symptoms do you expect this medication to affect and when?

2. How much should be taken and how often?

3. Can it be taken with meals?

4. How long should it be taken? Is it refillable?

5. Are there any special storage instructions?

6. What side effects are likely to occur? What should or can be done about them?

7. Are there any interactions with other medications the person is taking?

8. Does the person need to return for medication monitoring or blood tests?

I. MONITORING MEDICATIONS:

All medications require careful monitoring and specific written documentation of their use. Monitoring is done to be sure the drug is effective for its intended purpose and to prevent drug-induced problems. The effectiveness can often be determined by simply observing the disappearance of symptoms. Sometimes measuring the concentration of a drug in the blood is useful for preventing toxicity and ensuring effectiveness.

CHAPTER EXAM
IV. MEDICATION USE 37 - 48

37. True or false. A good place to return unused medication is to a pharmacy which can dispose of it properly.

38. If you do not understand the directions for use on the prescription label, you should:
    a. Ask the consumer
    b. Look it up in the Physician's Desk Reference
    c. Call the pharmacist
    d. Guess

39. What is the three point check system most clinicians use when administering medication?
    1. _____
    2. _____
    3. _____

40. Each time you administer medication, you should read the label to be sure of what three things:
    1. _____
    2. _____
    3. _____

41. Oral medicine (tablets and capsules) should be taken with how much liquid?
    a. Just a swallow
    b. 1 glassful (8 fluid ounces)
    c. 1 quart
    d. 1 gallon

42. True or false. When people have difficulty swallowing whole tablets, it is always acceptable to crush tablets, empty capsules or cut tablets.

43. The terms "apply," "instill," or "insert" are used when medication is to be used _____ or non-orally.

44. True or false. When a consumer is away from the facility for a few days, the medications should not be given in order to avoid errors.

45. True or false. It's a good idea to take a tablet or capsule with a full glass of water or other liquid.

46. True or false. It's a good idea to use a medicine cup to measure liquid medications.

47. True or false. Topical medications are external and identified on the label by terms "apply," "instill," or "insert."

48. True or false. Topical medications should not be swallowed.

All medications have more than one effect. Side effects are those effects, physical or emotional, which are not wanted, but which occur. They may be a nuisance and not serious or they can be quite serious. Any symptom can be a drug side effect. If a symptom occurs after starting a medication, consult your pharmacist, nurse or physician to see what can be done about it. Always document your observations accurately.

Some drugs interfere with the actions of other drugs. This is why it is so important to let the physician and pharmacist know, when a new medication is ordered, about any other medication (prescription or nonprescription) a person is taking.

J. MEDICATION ERRORS:

Despite our best efforts, each of us makes mistakes. Medications are no exception. One of the most frequent errors is forgetting to administer a scheduled medication. Most of us have had to take an antibiotic. Few people make it more than three days before missing one of the several dosages in a day. It happens. The most important thing is to deal with it appropriately.

If a dosage of a medication is missed, this event should be documented. As a general rule, if it is less than one-half of the time before the next scheduled dosage has expired, give the medication and continue with the next dosage on schedule. If more than one-half of the dosage interval has passed, skip the missed dosage and continue with the next dosage as scheduled. If there is any question or if you notice any ill effects from the missed dosage, call the pharmacist, physician, or nurse for advice.

Other medication errors can also occur: incorrect dosage, giving medication to the wrong patient, administering medication by the wrong route, giving the wrong medication, etc. When these kinds of errors occur, don't panic. Most of the time when this happens only once, it is not an overwhelming threat to the patient. There are, however, a few medications and circumstances in which such errors can result in serious effects. When this type of error occurs, you should keep the patient under observation. Immediately call the prescriber, pharmacist or nurse and explain what happened. They will give you instructions as to what needs to be done, if anything. They can tell you the symptoms which might occur for which you will need to watch. The error should be documented in the consumer's record.

You should also complete an incident form each time a medication error occurs. The purpose of the incident form is not to assign blame. The form is a means of identifying problems with the medication procedures which can be changed to prevent future problems. Try to identify where the

breakdown in procedure occurred which allowed the error. Take whatever steps necessary to be sure it doesn't happen again. Sometimes a single incident does not allow for identification of the problems within a procedure, therefore, all medication error incidents should be reviewed and discussed by a small committee periodically with the goal of improving medication procedures.

Many facilities have policies in place to deal with medication errors. You should follow these policies. The important thing is that the error is documented and process problems are identified to prevent the error in the future.

K. DOCUMENTATION:

Good records are always important when dealing with medications. They are critically important, however, when working with persons with developmental disabilities, because they may not be able to tell you whether they have taken their pills or medicine and because several staff members may be working with the same person at different times. One way to easily provide the necessary documentation is to put a chart on the wall near where the medications are stored. Each time an individual takes medications, the following information should be recorded:

1. Name of the person receiving medication;

2. Name of the medication;

3. The amount taken;

4. Name of staff providing assistance and supervision; and

5. Date and time of administration.

CHAPTER EXAM
IV. MEDICATION USE 49 - 58

49. For each new prescription, list at least five of the eight things you should know:
    1. _____
    2. _____
    3. _____
    4. _____
    5. _____
    6. _____
    7. _____
    8. _____

50. True or false. Monitoring is required for all medications.

51. A medication effect which is not wanted is called a _____.

52. True or false. Side effects from a drug can never be serious but always are a nuisance.

53. True or false. The effect of one medication may be altered by another medication.

54. True or false. If a medication error occurs, it should not be written down to prevent legal liability.

55. When an error occurs, you should call a _____, explain what happened, and get instructions on how to deal with it, if needed.
    a. Physician
    b. Pharmacist
    c. Nurse
    d. Any of the above.

56. True or false. You should know the names of the medications in use and their purpose.

57. _____ is done to make sure the drug is fulfilling its intended purpose and to prevent drug-induced difficulties.

58. Side effects from taking drugs can be a nuisance and not crucial or they can be _____.

Medication is not effective unless it is used properly. Overdosage, missed doses, improper scheduling, lax observations, and inaccurate documentation may cause the person serious harm or even death. All errors in administration of medications should be reported as soon as possible to the physician.

There will also be documentation errors. It is very easy to document a medication on the wrong consumer's sheet or on the wrong line of the form. These errors should never be erased, crossed-out, or whited-out. These errors should be circled and "error" written next to them with the initials of the person who made the notation following. A note should then be written which explains the error. This may seem to be a trivial matter, but it is not. A medication administration record is a legal document and the court frowns on erasures or unexplained changes.

L. PRN MEDICATION:

PRN is an abbreviation for the Latin *pro re nata* meaning "when needed" or as more commonly stated, "as needed". It is used in the directions for giving medication when a medication is to be given only under certain circumstances rather than on a regular schedule. The order should specify these criteria. For example:

prn systolic blood pressure < 100 mm Hg,
prn constipation,
prn headache.

A common bad habit among prescribers is to write an order for a common drug prn without specifying the criteria. If the order is for aspirin 325 mg q 4 h prn, when do you administer the drug? Is it for headache, other pain, inflammation, platelet inhibition, or what? When such an order is received, you should clarify the "for what reason" or criteria.

Another common problem is the lack of frequency information, or the time allowed between dosages. If our aspirin example from above were: aspirin 325 prn headache, you would administer an aspirin tablet when the patient has a headache. Five minutes later, he/she still has a headache. Do you administer another aspirin tablet? Of course not, but should you give more aspirin in two hours, or four hours?

Each prn order should specify the drug, the dosage size, dosage form if available in more than one, dosage frequency and indication or criteria of when to use it. If any of this information is missing it should be clarified at the time the order is received.

Each time a prn medication is given, it must be documented. The medication administration record should record the time the medication was given and who administered it. There should also be a note describing the situation or reason it was given and the response to the medication. For example, a laxative prn should generate two notes, one saying that the patient has not had a bowel movement for three days and the second, probably the next day, stating that the patient passed a large formed stool.

CHAPTER EXAM
IV. MEDICATION USE 59 - 63

59. To correctly document the medication of each individual, these five things should be recorded:
    1. _____
    2. _____
    3. _____
    4. _____
    5. _____

60. True or false. When a documentation error has been made, you should erase, cross-out or white-out the error and explain why the error occurred.

61. PRN is an abbreviation for pro re nata, meaning _____.

62. When is the abbreviation PRN used? _____.

63. Each PRN order should specify what five things?
    1. _____
    2. _____
    3. _____
    4. _____
    5. _____

V. DRUG INFORMATION

A. HOW MEDICATIONS WORK:

A disease is an abnormality in the physiology or functioning of the body. Drugs are chemicals which interact with the physiology of the body. Drugs can be used to "change" the altered physiology associated with disease, resulting in dissolution of the manifestations of disease or prevention of death or long-term complications of disease. Drugs DO NOT CURE; they cover up symptoms.

All drugs act by binding to cells or chemicals within the cells. These binding sites are called receptors. Each drug binds only with specific receptors much like a key only fits certain locks. When a drug binds to a receptor, a series of reactions or changes in physiology begins resulting in one or more pharmacological effects. What effects are produced is dependent on which drug binds to which receptor.

Unfortunately no drug produces only one effect. The desired effect is called the therapeutic effect. The other effects are called adverse reactions, side effects or untoward reactions. Adverse effects may take various forms. They may be side effects which are barely noticeable and of no consequence (e.g., slight increase in heart rate), or may be annoying but not serious (e.g., dry mouth), or serious, even life threatening (e.g., difficulty breathing). Allergic reactions occur when the body produces antibodies to the medication. These antibodies bind with the medication, causing the release of substances that produce the reaction. These reactions may manifest as skin rashes, difficulty breathing, shock, etc. Toxic effects are produced from excessive dosages of medication. This may happen with intentional or accidental overdosage or may occur within the usual dosage range in some sensitive individuals. Other disease states like renal failure, liver disease, and heart failure predispose the individual to toxic effects.

CHAPTER EXAM
V. DRUG INFORMATION 64 - 72

64. A _____ is an abnormality in the functioning of the body.

65. _____ are chemicals which interact with the functioning of the body.

66. All drugs act by binding to cells or chemicals within the cells. These binding sites are called _____.

67. True or false. The desired effect a drug produces is called the side effect.

68. Adverse effects of a drug can take several forms. Match the correct term for each of the following adverse effects.

A. Toxic effect B. Allergic C. Side effect

69. ____ effect when the body makes antibodies to the medication

70. ____ effects when the dosage is too high for the individual.

71. ____ any unwanted effect of a medication

Because of the potential for either, or both, beneficial and adverse effects, it is important to monitor the response to any medication and to document it.

B. CLASSES OF MEDICATIONS:

There are many ways to classify drugs. The one used here is consistent with the companion volume, *The Essential Guide to Prescription Drugs.* A brief review of these classes is provided here. Certain categories which are commonly used by people with developmental disabilities are discussed in more detail.

A survey of medications used by consumers in the Montana developmental disabilities system in 1996 revealed that many different medications were taken by consumers. The most frequently represented classes included anticonvulsants, the various classes of agents used for brain disorders (antipsychotics, antidepressants, antianxiety agents, mood stabilizers, and stimulants), gastrointestinal (GI) drugs (antacids, histamine-2 (H2) antagonists, laxatives), and anti-infective agents. The following is a brief description of each of these categories of medications with some hints on how to use them properly. Please note that the description is for the group and not all information will apply to each drug within the group. Examples of common medications in each group are provided for purposes of recognition. For specific information regarding each individual drug and differences among the medications within each group, please consult the companion volume *The Essential Guide to Prescription Drugs.*

1. *Medications for Behavior and Psychiatric Symptoms:*

A common concern is the use of medications for control of behavior. Somehow using medication to control behavior is viewed differently than using medication to control blood pressure. In fact, in either case, an abnormality of physiology is resulting in symptoms. The medication, in either case, is simply correcting this abnormal physiology. Medications do not, and cannot, plant thoughts in someone's brain nor control someone's thinking.

Stated another way, the theory of drugs used to alter behavior is that abnormal chemistry in the brain is resulting in undesirable and unacceptable behaviors. Medications help to straighten out the brain chemistry, and thereby eliminate some of the behavioral symptoms. A normally functioning brain is more likely to respond to a behavior modification program. In fact, whenever medications are used for behavior, a behavior modification program should also be used.

The Health Care Financing Administration recommends in its publication *Psychopharmacological Medications - Safety Precautions for Persons with Developmental Disabilities* general guidelines for the

safe use of psychopharmacological medications in the intermediate care facility for the mentally retarded (ICF/MR):

• Rule Out Other Causes. Before medication is used, medical, environmental and psychosocial causes for behavioral or psychiatric symptoms should be ruled out. As someone who knows the person well, you need to assist in providing this information to the physician.

• Collect Baseline Data. Target behaviors or symptoms should be identified and quantified using frequency count, duration recording, timed sample, interval recording, or rating scales. This information is essential to assess the efficacy of either behavioral or pharmacological interventions.

• State a Reasonable Hypothesis. This item is primarily the responsibility of the physician. Briefly it means that there should be some rational basis for the use of medication and the selection of the specific medication, and that the desired outcome should be stated.

• Intervene in the Least Intrusive and Most Positive Way. Before medications are used, other means should be tried first. Antecedent analysis, fading, forward and backward chains, shaping, specific program steps with certain levels for advancement, or remedial branching, stimulus control, or task analysis should be tried first.

• Monitor for Adverse Drug Reactions. Again, as the care giver, you need to know what side effects are likely and/or serious for each medication taken. You must also provide accurate feedback to the physician.

• Collect Outcome Data. This is the collection of data similar to the baseline data. Far too often medication which is ineffective is continued because of the lack of accurate response data.

• Start Low and Go Slow. Starting with lower dosages with gradual escalation of dosage helps to minimize side effects and toxicity. Physicians will determine these dosages, but because they may be following this principle, you will need to let them know how the individual is responding so that the dosage may be adjusted properly.

• Periodically Consider Gradual Dosage Reduction. Using the minimum effective dosage helps to minimize side effects and preserve functioning. Sometimes medication is not required all the time; when it is no longer needed, it should be discontinued. Again this is the physician's decision, but this decision needs to be based on accurate outcome information provided by the care givers.

• Maintain Active Treatment Objectives. Medication should not decrease functioning such that the consumer is unable to participate in active treatment. Sometimes there is a period when the medication is first started that sedation or some other side effect limits functioning, but this usually wears off over the next several days. If function continues to be impaired, you should consult the prescribing physician.

• Maintain Optimal Functional State. Remember the purpose of medication is to increase functioning. If the consumer is not more functional on the medication, then discontinuation should be considered.

Antipsychotic Agents

This group is so named because they are effective in psychotic disorders, such as schizophrenia, and psychotic symptoms, such as hallucinations, delusions and thought disturbances. Commonly used examples include haloperidol (Haldol®), chlorpromazine (Thorazine®), thioridazine (Mellaril®), and risperidone (Risperdal®). They are also used for many other symptoms ranging from intractable hiccups and itching, to nausea and vomiting, to manic symptoms in bipolar disorder to aggressive behavior and self-injurious behavior.

Many of these agents are notable for sometimes causing what are termed extrapyramidal side effects (EPS). These are muscle and movement disorders including restlessness, muscle spasms, rigidity, and tremors. These should be reported to the physician since they can usually be treated with some success.

Antidepressant Agents

Antidepressants have many uses beyond the treatment of depression. Some are used to treat panic disorder, obsessive compulsive disorder, and other anxiety disorders, eating disorders, nocturnal enuresis (bed wetting), neurological pain, migraine headaches, and behavior disturbances such as impulsivity, obsessing, aggression, self-abuse, inattention, etc. Some are also used to treat certain sleep disorders.

There are many different antidepressants. The most commonly used agents fall into two categories, the tricyclic antidepressants (TCAs) such as amitriptyline (Elavil®), imipramine (Norpramin®), nortriptyline (Pamelor®) or desipramine (Pertofrane®), and selective serotonin reuptake inhibitors (SSRIs) such as fluoxetine (Prozac®), sertraline (Zoloft®), paroxetine (Paxil®), or fluvoxamine (Luvox®).

Anti-anxiety Agents

The anti-anxiety agents fall into two groups, buspirone (BuSpar®) and benzodiazepines. The benzodiazepines are used for anxiety, insomnia, seizures, muscle spasms, panic attacks, treatment of EPS, tremors, aggressive behavior, alcohol withdrawal, catatonia, and acute manic symptoms. These agents include diazepam (Valium®), lorazepam (Ativan®), clonazepam (Klonopin®), clorazepate (Tranxene®), flurazepam (Dalmane®) and temazepam (Restoril®).

Buspirone lacks the anticonvulsant, muscle relaxant, and hypnotic effects, but is used in anxiety disorders, depression, and behavior disorders (e.g., agitation, aggression, antisocial behavior, and self-injurious behavior).

Mood Stabilizing Agents

Mood stabilizers include lithium and two medications which you will recognize as anticonvulsants - valproate (Depakote®, Depakene®) and carbamazepine (Tegretol®). These agents are effective in stabilizing excessive mood swings in bipolar disorder formerly known as manic depressive illness. They are also routinely used for behavioral problems especially when associated with mood swings or emotional lability, aggressive outbursts, lack of self control, or self-injurious behavior.

Stimulant Agents

The stimulants, methylphenidate (Ritalin®), dextroamphetamine (Dexedrine®) and pemoline (Cylert®), are agents used for attention deficit hyperactivity disorder (ADHD). This disorder is common in both children and adults and among persons with or without developmental disabilities. ADHD is characterized by problems with paying attention, hyperactivity and/or impulsivity. Methylphenidate and dextroamphetamine are considered effective for all three symptoms; pemoline is generally considered to be less effective. Other agents used to treat ADHD include clonidine (Catapres®) and some antidepressants such as imipramine and buproprion (Wellbutrin®). Clonidine is most commonly used to treat high blood pressure, but is also used for ADHD. Clonidine and antidepressants are used to control impulsivity or inattention even in the absence of ADHD.

Beta Blocking Agents

Beta blockers are also used to treat behavior or psychiatric symptoms. These agents are so named because they block beta-adrenergic receptors. The most commonly used agents are pindolol

(Visken®) and propranolol (Inderal®). These agents are used to treat akathisia. Akathisia is characterized by restlessness and inability to sit still. Beta blockers are also used to treat some symptoms of anxiety such as palpitations (pounding heart), tremors, or muscle tension. They are also used to treat agitation, aggressiveness, migraine headache, angina, rhythm disturbances of the heart, high blood pressure and a long list of other medical disorders.

Calcium Channel Blocking Agents

Verapamil (Calan®) has been used as an adjunct in the management of schizophrenia, mania and also to help antisocial behavior or aggression. Other agents in this group have also been used, but less commonly. Verapamil is also used for many medical diseases such as high blood pressure, angina pectoris, and rhythm disturbances in the heart.

Narcotic Antagonistic Agents

Naltrexone (Trexan®) blocks the effects of narcotics such as morphine or heroin. This drug has been used with some success in the management of self-injurious behavior. The theory is that the self-injury releases endorphins, the natural narcotic within the brain, resulting in a euphoric effect or pleasant feeling. By using naltrexone this euphoria is blocked, thus removing the stimulus for self-abuse.

CHAPTER EXAM
V. DRUG INFORMATION 72 - 77

72 - 76 True or false. When medication is used for behavioral symptoms:

72. True or false. Medications should never be used to treat abnormal behavior or to eliminate some of the behavioral symptoms.

73. ____It should always be accompanied by a behavior modification program.

74. ____It always interferes with the behavior modification program.

75. ____Medication is the treatment of first choice for all behavioral symptoms.

76. ____The purpose of the medication is to increase function.

77. The 10 general guidelines for the safe use of psychopharmacological medications in intermediate care facilities for the mentally retarded are:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

The care giver's contribution to fulfilling these guidelines is primarily:

a. Selecting the drug.
b. Deciding the dosage.
c. Stopping the drug.
d. Providing accurate behavioral data.

2. *Nonsteroidal Anti-inflammatory Drugs (NSAIDs):*

This large group of agents shares anti-inflammatory (relief of inflammation) and analgesic (pain relief) effects. This group includes many products well-known such as aspirin, ibuprofen (Motrin®, Advil®, Nuprin®), and naproxen (Aleve®, Naprosyn®). Acetaminophen (Tylenol®) is not included in this group since it does not have anti-inflammatory properties.

NSAIDs are used for minor, moderate and severe inflammation and/or pain ranging from tension headaches and sore muscles to rheumatoid arthritis and gout. They may also be used to treat fever (antipyretic action) as can acetaminophen.

As a group these agents tend to be hard on the stomach. They cause irritation and sometimes bleeding or ulcers. Some agents are worse than others and some individuals tolerate some agents better than others. To minimize these effects, these drugs should routinely be taken with a full glassful of water (8 fl. oz.) and with meals or a snack. One should also observe for signs of bleeding in the gut. Blood in the stool usually appears as black and tarry or as bright red blood. If blood is vomited it usually has the appearance of coffee grounds.

3. *Anti-infective Agents:*

Infections are common. We've all had at least one in the past year: a cold or stomach flu (viral infection), a pimple (bacterial infection), a wart (viral infection), or Athlete's foot (fungal infection). Many infections will go away "on their own." What this really means is that the body's natural defenses will gear up and eradicate the infecting organism.

There are two very important principles to remember about anti-infective agents. One is that no drug is effective for all infections. The second is that anti-infective agents simply hold the infection in check and minimize damage until the body's defenses gear up and kill the organism.

To expand on the first principle, we have drugs that are effective against certain bacteria, but not other species of bacteria, viruses, fungi, etc. Pneumonia, an inflammation of the lungs, is a common infection. Most commonly this is caused by a virus. When this is the case, penicillin, ampicillin, or erythromycin are completely ineffective. When caused by bacteria, *Streptococcus pneumoniae* being the most common organism, any of these agents would be expected to be effective. In other circumstances, such as someone whose immunity is compromised (e.g. someone who has had a kidney transplant), there is a good chance that the causative bacterium is an organism for which these antibiotics are not effective. Sometimes an organism which is originally sensitive to an antibiotic will develop resistance to that antibiotic during treatment.

There is a great deal of both art and science that goes into the selection of an appropriate anti-infective agent for pneumonia or any other infection. This is primarily the responsibility of the physician and pharmacist. You simply need to provide them with an accurate description of the signs and symptoms, medications, allergies, and circumstances in which the infection developed.

The second principle is equally important. There is a tendency to begin a course of anti-infectives and to stop taking them a few days later when feeling better. When this is done, the symptoms have dissipated because the anti-infective has inhibited the organism, but has not killed it. Because it is present in lower numbers the person feels better. But the bacteria are still there. When

the anti-infective is removed, they begin to grow and produce symptoms again. Under these circumstances resistant organisms are more likely to develop, making the infection more difficult to treat. If the anti-infective is continued for the entire course, there is sufficient time for the body's defenses to kick in and kill the remaining organisms.

It is for this reason that the directions for anti-infective agents usually contain a statement such as "until gone" or "complete the entire course of treatment". The length of treatment may in some cases be a single dose, but is usually seven to fourteen days. In some cases, the treatment may be required for months or years, such as with tuberculosis. In any case, be sure to complete the whole course of any anti-infective therapy exactly as prescribed.

4. *Gut Medications:*

Persons with developmental disabilities seem to have a high incidence of a variety of gastrointestinal (GI) disorders. Commonly used medications include laxatives and acid suppressing medications.

Laxative Agents:

Constipation is a very common problem. It can be defined as infrequent stools, hard stools, or difficulty passing stools. Non-drug measures such as exercise, high-fiber foods, and increased intake of fruits and vegetables are often helpful. But this non-drug therapy is sometimes difficult to accomplish and sometimes ineffective. When this is the case, laxative medication can be used.

Different laxatives work by different mechanisms. Bulk-forming laxatives work by increasing the bulk or volume of unabsorbed fiber in the gut, thus stimulating the normal mechanisms for evacuation. Psyllium is the most commonly used of these agents. It is available as powder (Metamucil®) which is mixed with liquid to form a slurry and drunk, or tablets (Fibercon®). It is important that a large volume of liquid (8 fl. oz.) be ingested with each dosage. If inadequate amounts of liquid are taken, psyllium can form a mass which can lead to impaction (blockage of the bowels).

Another commonly used group of laxatives are the stool softeners. These include docusate sodium (Colace®) and docusate calcium (Surfak®). They prevent the absorption of water from the stool, making it softer and more easily passed. These agents are useful when hard, dry stools are the problem.

Lactulose (Chronulac®) works by breaking down in the colon into two sugars which are not absorbed. This pulls or holds water in the gut, which softens the stool and creates more bulk to stimulate evacuation.

Stimulant laxatives include several groups of medication which stimulate the gut to push food-stuffs through the bowel. Examples include bisacodyl (Dulcolax®), cascara sagrada (a plant extract), senna (another plant extract), phenolphthalein and castor oil. Excessive use of stimulant laxatives can suppress the natural bowel function causing a reliance on laxatives for evacuation.

It is common to combine laxatives of different types. For example, it is common to use bulk-forming or stool softeners on a regular, scheduled basis and stimulants as needed. There are also a number of products which combine a stool softener with a stimulant in the same dosage form (Peri-Colace®).

One reminder that is so obvious that it is often overlooked - laxatives should be discontinued when the person develops diarrhea. This is probably not necessary with the bulk-forming type. In fact these can be used to treat diarrhea, but the others should always be stopped until the diarrhea is over. Remember that laxatives, especially stimulant laxatives, may be causing the diarrhea.

Acid Suppressing Agents:

The H2 receptor is a histamine receptor which, when stimulated, results in stomach acid secretion. An antagonist inhibits the action, so an H2 antagonist prevents stomach acid secretion. H2 receptor antagonists are among the most commonly prescribed drugs and most commonly used OTC drugs. This group includes cimetidine (Tagamet®), ranitidine (Zantac®), famotidine (Pepcid®), and nizatidine (Axid®). These drugs inhibit stomach acid secretion and are used to treat peptic ulcers, gastritis or heartburn.

Omeprazole (Prilosec®) prevents stomach acid formation. It is most commonly used to treat reflux - a burning sensation in the esophagus or food tube resulting from acid fluxing up from the stomach. It can also be used to treat ulcer disease.

Antacids are chemicals which neutralize acid. These agents are most commonly used to treat gastritis or heartburn associated with overeating. Most are a combination of aluminum and magnesium hydroxides (Maalox®, Mylanta®, Gelusil®) or calcium carbonate (Tums®). In general, the liquid suspensions are more effective, but chewable tablets are more convenient and better tasting.

Motility Agents:

Metoclopramide (Reglan®) and cisapride (Propulcid®) are drugs which stimulate the movement of foodstuffs through the gut. They are used in gastroesophageal reflux disease (GERD)—a disorder where heartburn is caused by the reflux of stomach acid up into the esophagus. They are usually

combined with acid suppressing medications in the management of GERD. They are also sometimes used for some forms of constipation. They can also be helpful in diabetic gastroparesis—a disorder of gut motility secondary to nerve damage from diabetes. Metoclopramide can also be used to treat nausea and vomiting.

CHAPTER EXAM
V. DRUG INFORMATION 78 - 90

78-89 Match the categories of medication with the best description of their characteristics.

78. ____Antipsychotic Agent
79. ____Antidepressants
80. ____Antianxiety Agents
81. ____Mood Stabilizers
82. ____Stimulants
83. ____Beta Blocker
84. ____Calcium channel blocker
85. ____Narcotic Antagonistic
86. ____Nonsteroidal Anti-inflammatory
87. ____Laxatives
88. ____Motility Agent
89. ____H_2 Antagonists

a. Fall into two groups; buspirone and benzodiazepines. Examples are Valium®, Ativan®, Dalmane®, Restoril®.
b. Used to treat akathisia and behaviors. Also used for a long list of medical disorders. Commonly used agents include Viskin® and Inderal®.
c. Effective for hallucinations and delusions. Examples are Haldol® and Thorazine®.
d. Used for ADHD and impulsivity. Examples are Ritalin®, Dexedrine®, and Cycert®.
e. Often used for constipation and gastroesophageal reflux disease. Examples are Reglan® and Propulcid®.
f. Sometimes used for depression and in panic disorders and other anxiety disorders. Examples are Prozac®, Zoloft®.
g. Trexan blocks effects of morphine or heroin, used for self-injurious behavior.
h. Calan® has been used as an adjunct of schizophrenia, mania and antisocial behavior or aggression.
i. These drugs inhibit stomach acid secretion and are used to treat peptic ulcers, gastritis or heartburn. Examples are Tagamet®, Zantac®, Pepcid®, Axid®.
j. Include lithium, valproate and carbamazepine. Used for bipolar disorders and behavioral problems associated with mood swings or emotional lability and self-injurious behavior.
k. Used to treat or prevent constipation. Examples of drugs used are Metamucil®, Colace®, Surfak®, Chronulac®, or Dulcolax®.
l. Also known as NSAIDs. Used for minor, moderate, and severe pain and inflammation. Can also be used to treat fever. Examples are Motrin®, Advil®, Aleve®, and Nuprin®.

90. List the two most important principles about anti-infective drugs.
1. _____
2. _____

5. *Anticonvulsant or Anti-epileptic Agents:*

There are many different anti-epileptic agents available. A table showing generic and brand names arranged by chemical class is provided. Several of these you will recognize as very commonly used (phenytoin or Dilantin®, phenobarbital, carbamazepine or Tegretol®, or divalproex or Depakote®). Others are less commonly used. The value of the chemical classification is that there are more similarities within each class than between classes.

Anticonvulsants are primarily used to prevent seizure activity. Different seizure types respond to different anticonvulsants; different individuals respond to different anticonvulsants. Several medications may be tried before finding the one which works best for an individual. It is also quite common that more than one anticonvulsant is needed to control a seizure disorder. Since anticonvulsants are intended to prevent seizures, they must be taken regularly as prescribed, whether or not seizures continue. In fact, seizures are more likely to occur if an anticonvulsant is suddenly stopped; therefore, be sure not to run out of medication.

Some anticonvulsant dosages are adjusted with the aid of testing for serum drug concentrations. When blood is drawn for this purpose, the time of the last dosage should be reported to the technician and to the physician or nurse. This information is important for interpreting the result of this drug concentration.

Different people require widely different dosages to obtain the desired effect without causing toxic effects. In fact, the dosage for an individual often changes. This is because of changes in diet, other drugs added or subtracted from the regimen, or changes in the disorder. Monitoring anticonvulsants is a never-ending process.

Seizures and Seizure Disorders:

A basic understanding of the central nervous system (CNS) is needed to understand what a seizure is. The CNS consists of the brain and spinal column. Within the brain and spinal column are about 10 billion nerve cells (neurons) that carry impulses or messages back and forth throughout the CNS. The messages are passed from neuron to neuron in a chain reaction and it is these messages which tell the body what to do and which allow the body to function.

Neurons have two messages: go (excitatory) and stop (inhibitory). When a neuron gets "excited," the message passes to its neighbor. When a neuron gets "inhibited," the message stops and is not passed on to other neurons. Both excitatory and inhibitory neurons are important to our well-being. For example, when a signal is received from your left hand that it will be burned if not removed from the stove, your brain excites the neurons which cause your muscles to pull your left arm from the stove.

Inhibitory processes are important in a different way. Because neurons can stop the passage of some messages, we can pay attention to a person speaking to us while ignoring the sounds of traffic in the streets, the sight of objects in the room, and the taste of gum in our mouths. Inhibitory processes allow us to focus on the most important happenings around us while ignoring the rest. Our senses are constantly bombarded with stimuli which would "overload" the CNS if inhibitory processes were not working. Thus, a balance between excitatory and inhibitory neurons keeps the CNS and the body operating correctly. When an imbalance allows a sudden burst of neural activity, a seizure occurs.

ANTICONVULSANTS

GENERIC NAMES	BRAND NAMES
BARBITURATES	
Mephobarbital Phenobarbital	Mebaral Luminal
HYDANTOINS	
Ethotoin Mephenytoin Phenytoin	Peganone Mesantoin Dilantin
SUCCINIMIDES	
Ethosuximide Methsuximide Phensuximide	Zarontin Celontin Milontin
OXAZOLIDINEDIONES	
Paramethadione Trimethadione	Paradione Tridione
BENZODIAZEPINES	
Clonazepam Clorazepate Dipotassium Diazepam	Klonopin Tranxene Valium
MISCELLANEOUS	
Acetazolamide Carbamazepine Divalproex Felbamate Gabapentin Lamotrigine Magnesium Sulfate Phenacemide Primidone Valproic Acid	Diamox Tegretol Depakote Felbatol Neurontin Lamictal - - - Phenurone Mysoline Depakene

Seizures are Signs:

Seizures are signs of a malfunction or disorder in the CNS. They occur when the balance between inhibitory and excitatory neurons is lost. A seizure occurs when there is a burst of excitatory neural activity in a small area of the brain. This burst spreads to surrounding neurons and to other parts of the body because the usually inhibitory neurons are not working properly. These **uncontrolled bursts of neural activity** temporarily disrupt body functioning. Anyone can have a seizure under certain circumstances. For example, a high fever in a child may result in a seizure. Certain drugs or other chemicals may cause someone to have a seizure. Withdrawal from addictive substances may also produce seizures. Other causes of seizures are head wounds, birth injuries, brain tumors, nutritional deficiencies, and infections in the CNS. When the cause of a seizure can be found and corrected (e.g., lowering a child's fever), the seizure will not happen again. A seizure that is caused by a temporary physical or environmental condition and that is not likely to recur is called an "isolated seizure."

Many people have seizures over and over again. This is because the cause cannot be found (idiopathic) or because the cause cannot be eliminated (e.g., head injury). This group of people is said to have a seizure disorder or, as it is sometimes called, epilepsy. Remember a seizure disorder is secondary to or caused by an identifiable disorder such as head injury, birth injury, brain tumor, disease, or by some unknown cause. A seizure is a **sign or symptom** of a disorder in the CNS; a seizure is **not a disease.**

Types of Seizures:

As mentioned, a seizure is an uncontrolled neural outburst in the CNS. The region of the brain affected determines the outward signs (the signs which can be seen by an observer). There are many different types of seizures, but all can be grouped within two basic categories: **Focal** and **Generalized.**

FOCAL SEIZURES

A seizure is said to be focal (or partial) if it begins in a small, localized area of the brain and remains there or slowly spreads to other parts of the brain. Some focal seizures may produce abnormal sensations (e.g., numbness, tingling, flashing lights and color).

One type of focal seizure is a focal motor seizure, in which an outburst of neural activity in the brain causes the contraction of a group of muscles. Which muscles are affected depends on which neurons (or areas in the brain) are malfunctioning.

A partial complex seizure (sometimes called a psychomotor or temporal lobe seizure) is also a focal seizure. This seizure lasts ½ to 2 minutes and is characterized by changes in behavior, loss of

conscious contact with the environment, and automatisms (repetitive, rhythmic, purposeful movements) such as lip smacking, swallowing, walking aimlessly or picking at one's clothing. The partial complex seizure is frequently preceded by a peculiar sensation or a feeling called an aura. The aura may be an unusual smell, a feeling of having been there before (*deja vu*), or some other unusual sensation. This aura heralds the onset of the seizure, usually within seconds. After the seizure, the individual does not remember the events of the seizure and may take minutes to hours to fully regain consciousness.

GENERALIZED SEIZURES

Although a generalized seizure starts in a small area of the CNS, its first outward signs involve the entire CNS and its manifestations are "generalized" and visible throughout the body. The most common type of seizure is the generalized tonic/clonic seizure. It is sometimes called a grand mal seizure. The seizure usually starts without warning, although some individuals have a nonspecific sense of the impending event called an aura. There is a sudden loss of consciousness, a tonic phase in which the muscles are tensed (flexed), and the person falls to the floor, followed by a clonic phase in which muscles relax and tense alternately. Breathing may be disrupted and, if so, the skin turns bluish. Often there is an involuntary loss of bowel or bladder control. The tonic phase usually lasts ½ to 1 minute, but even though the muscles then relax, the individual cannot be aroused for several minutes. When aroused, the individual does not remember the seizure, often is drowsy or has a headache, and may take several days to return to completely normal functioning.

Another common generalized seizure is the absence attack. It is also sometimes called a petit mal or minor motor seizure. There is a sudden loss of consciousness without falling or muscular manifestations. The person appears to "blank" for 5 to 30 seconds and then recovers quickly, completely, and without memory of the event. Sometimes the absence attack is accompanied by flashing eyelids or chewing movements. Absence attacks are most often seen in children.

There are many other types of seizures. Any abnormal movement, sensation or feeling which is sudden in onset, short in duration, and followed by a return to normal may be a seizure. Many individuals have more than one type of seizure.

<u>During the Seizure:</u>

If you observe someone having a seizure, do not panic. Seizures are brief—not more than a few minutes—although they seem longer to most observers.

1. If the person has not yet fallen, help the person to the floor to prevent injury. Place a small pillow or rolled-up garment under the head.

2. Once a seizure has started, it cannot be stopped. Do not try to restrain or revive the person having the seizure. Remain calm. Do not leave the person alone.

3. Clear the surrounding area of hard, sharp, or hot objects which might be harmful if bumped against. If you are unable to move any hard, sharp or hot objects which may be unsafe or harmful to the person, kneel or stand between such objects and the person so that their limbs do not strike dangerous objects during the seizure.

4. If the mouth is closed, do not force anything between the teeth. Despite the myth, it is nearly impossible for a person to swallow his or her own tongue. A possible danger is that a person might bite the inside of his or her own mouth. Therefore, if the mouth is open you might place a soft object like a handkerchief between the side teeth, but be extremely careful not to obstruct air flow or get your fingers bitten. NEVER place anything between the front teeth or push anything into a closed mouth.

5. Make sure breathing is unobstructed during the seizure. Turn the person's head to the side. Loosen scarves, neckties, collars, or tight clothing. Maintain respect and privacy. Do not interfere with movement.

6. Speak calmly and reassuringly. The person may be able to hear what is being said by others during the episode. Speaking calmly will also help you feel more in control.

7. If a person seems to be passing from one seizure into another without regaining consciousness, a physician's help is required immediately. The situation is critical and potentially fatal. Call 911 or the appropriate emergency number as soon as possible.

8. One of the most helpful things an observer can do is document an accurate description of the entire event. Note everything that happens, particularly:

   a) Before the seizure: Unusual behaviors, sensations, or feelings of the person just prior to its onset.

   b) Sequence of behavior during the seizure:

   - How did it start?
   - Did breathing stop?
   - Did the skin turn blue?
   - Were muscles tensed?
   - Were eyes pointing in any particular direction?
   - Did the person fall?
   - Did the person lose bowel or bladder control?

   c) Length of the seizure: Use a watch, as perceptions of time elapsed are notoriously inaccurate.

d) Behavior after the seizure:

- When was full consciousness regained?
- Was the person drowsy or confused?
- Did the person have a headache?
- Were there any physical injuries incurred during the seizure?
- Can the person describe any aura (sensation or warning) prior to the seizure?

Following The Seizure:

Most seizures last only a minute or two. The person having the episode should never be left alone until full consciousness has been regained. Turn the person to the most convenient side to help saliva drain from the mouth. The individual should be covered with a blanket or coat. The person's privacy should be maintained. Offer comfort and reassurance. Make sure the person feels comfortable before being left alone and then check frequently in a supportive manner.

Preventing Seizures:

In rare cases, a seizure disorder can be cured by the surgical removal of damaged neurons. However, in most cases, medications are used to prevent seizures from happening. These drugs, called anticonvulsants, can completely prevent seizures from occurring in some individuals; in others, they only decrease the frequency with which they occur.

Physicians may occasionally use medications to interrupt ongoing or frequently repetitive seizures, but usually anticonvulsants are used to prevent seizures, not to treat them once they have begun. Therefore, it is important that these medications be taken regularly as prescribed, whether or not seizures continue to occur. Persons with seizure disorders should carry a medical identification card or bracelet to help first aid and physician intervention during the acute episodes.

CHAPTER EXAM
V. DRUG INFORMATION 91 - 105

91. The central nervous system is composed of the _____ and the _____.

92. Neurons or nerve cells carry _____.

93. Neurons have two messages.
a) Another word for the "stop" message is _____.
b) Another word for the "excitatory" message is _____.

94. Screening out background noises is an example of an _____ message, while running away from a rattlesnake is an example of an _____ message.

95. Uncontrolled bursts of neural activity is one way to describe a _____.

96. True or false. Seizures can be caused by a variety of conditions and can occur in a variety of situations.

97. Epilepsy is another name for a _____.

98. Is a seizure a *disease* or a *symptom* of a CNS disorder? _____.

99. The two basic categories of seizures are _____ and _____.

100. In a focal motor seizure, specific muscles contract because _____.

101. Changes in behavior, loss of consciousness and automatisms characterize _____ seizures.

102. Describe an aura: _____

103. True or false. Generalized seizures typically involve the whole CNS and are visible throughout the entire body.

104. A grand mal seizure is more recently known as a _____ seizure.

105. An absence attack may also be known as a _____ seizure.

CHAPTER EXAM
V. DRUG INFORMATION 106 - 123

Questions 106 - 109
Matching: Match the characteristics with one of the following seizure conditions:

a. Focal-Motor
b. Partial Complex
c. Tonic/Clonic
d. Absence Attack

106. _____ Muscles tense or flex then relax and tense alternately.

107. _____ Frequently preceded by an aura.

108. _____ Partial seizure that starts in a small area of the brain and remains there or moves slowly to the rest of the brain.

109. _____ Lasts 5-30 seconds and often occurs in children.

110. True or false. The most common type of seizure is the generalized tonic/clonic seizure.

111. True or false. Proper functioning of the CNS requires a balance of excitatory and inhibitory neurons.

112. True or false. Anticonvulsants are used only to treat seizures when they occur.

113. When a person passes from one seizure to the next without regaining consciousness, you should: _____.

114. Which is the typical method of controlling or preventing seizures (choose one):
a. surgery
b. anticonvulsants

Questions 115 - 121: During a seizure, you should:

115. True or false. Force a tongue blade or stick or spoon between the person's teeth.

116. True or false. Put a small pillow or something soft under the person's head.

117. True or false. Restrain the person and restrict movement so the person doesn't get hurt from the convulsive movements.

118. True or false. Remove hot, hard, or sharp objects from the area.

119. True or false. Make sure breathing of the person is not blocked during the seizure.

120. True or false. Ignore the entire event and block it from your memory.

121. True or false. Record the behavior before, during, and after the seizure.

122. True or false. If it is difficult to open the person's mouth during a seizure, it is helpful to try to get a soft cloth between the front teeth.

123. True or false. Persons cannot hear what is going on around them during the time they are having a seizure.

Commonly Used Anticonvulsants:

Following are several commonly used anticonvulsants. Included with each is a list of side effects. These can be classified into three types : nuisance, special, and toxic.

1. Nuisance side effects—symptoms that occur commonly after first starting a medication or increasing its dosage, but that usually dissipate within a week. These are not harmful, just inconvenient. You need to contact the physician only if they persist.

2. Special side effects—symptoms which require special attention. These do not represent a threat to life, but are serious enough to warrant discussion with the physician as soon as possible.

3. Toxic side effects—symptoms which occur because the serum drug concentration is too high. The physician should be contacted immediately, as these symptoms could indicate a life-threatening situation.

PHENYTOIN

Phenytoin (Dilantin^{R}) is a commonly used anticonvulsant. It is used to prevent both focal and generalized seizures and is often the first drug chosen in the treatment of generalized tonic/clonic, focal motor, or partial complex seizures. The dosage required varies from person to person and serum phenytoin concentrations are used to establish the best dosage.

ANTICONVULSANTS AND THEIR POTENTIAL SIDE EFFECTS

Phenytoin (Dilantin[R])	tiredness, drowsiness tenderness, swelling, or bleeding of the gums * nystagmus * clumsiness, staggering * confusion * slurred speech * blurred vision
Phenobarbital (Luminal[R]) **Mephobarbital** (Mebaral[R])	drowsiness, hungover feeling * persistent or severe drowsiness * staggering * confusion * slurred speech
Primidone (Mysoline[R])	drowsiness, dizziness, clumsiness * confusion * shortness of breath * changes in vision
Valproic Acid (Depakene[R]) **Divalproex** (Depakote[R])	stomach upset, diarrhea * drowsiness * dizziness * unsteady walk * blurred vision
Ethosuximide (Zarontin[R])	stomach upset, headaches, hiccups * skin rash, itching
Carbamazepine (Tegretol[R])	drowsiness, clumsiness, nausea * severe drowsiness * severe dizziness * blurred vision
Clonazepam (Klonopin[R])	drowsiness * persistent, severe drowsiness * dizziness * unsteadiness

** The side effects preceded by an asterisk should be discussed with a physician as soon as possible.*

When someone first starts taking phenytoin, nuisance side effects often include tiredness or drowsiness. If this persists for more than a week, check with the physician about a change. When the dosage is too high, toxic effects might include nystagmus (involuntary jerky, repetitive movement of the eyeballs), clumsiness, staggering walk, blurred vision, confusion, or slurred speech. If any of these signs is present, contact your physician immediately.

Some people have tenderness, swelling, and bleeding of gums while taking phenytoin. This can be minimized with regular brushing, flossing, and gum massage. You should contact a dentist to learn how to help the person properly care for his/her teeth and gums and for regular teeth cleaning.

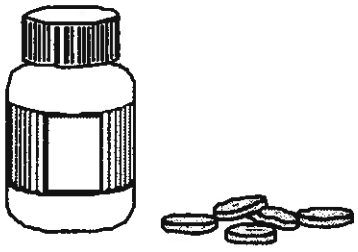
BARBITURATES

Phenobarbital (Luminal[R]) and mephobarbital (Mebaral[R]) are also frequently used anticonvulsants. They are used for the same type of seizures as is phenytoin and are sometimes combined with phenytoin to help control seizures.

Drowsiness or a "hungover" feeling are common during the first few days of taking phenobarbital or mephobarbital. This usually resolves itself within a week. If the dosage is too high, toxic effects include staggering, confusion, slurred speech, and severe or persistent drowsiness. The physician should be contacted immediately if any of these symptoms develop.

PRIMIDONE

Primidone (Mysoline[R]) is useful in many types of seizures but especially partial complex seizures. Drowsiness, dizziness, and clumsiness are the most common side effects, but usually do not persist for more than a few days. Confusion, shortness of breath, or changes in vision may mean the dosage is too high. You should contact the physician immediately if they occur.



VALPROIC ACID

Valproic acid (Depakene[R]) or divalproex (Depakote[R]) are used to control absence attacks, but may also be useful in other seizure types. Abdominal or stomach upset or diarrhea sometimes occur, but usually last only a few days. Drowsiness, dizziness, unsteady walk, or blurred vision may suggest too high a dosage and the physician should be consulted.

ETHOSUXIMIDE

Ethosuximide (Zarontin®) is also used to prevent absence attacks. Stomach upset, headaches, and hiccups sometimes occur, but usually do not last more than a few days. A number of people have trouble with skin rash or itching while taking ethosuximide. If this occurs, check with the physician immediately.

CARBAMAZEPINE

Carbamazepine (Tegretol®) is useful in partial complex, generalized tonic/clonic, and many other seizure types. Clumsiness, drowsiness, and nausea sometimes occur, but usually do not last more than a few days. Severe drowsiness, severe dizziness, or blurred vision are signs of too high a dosage and should be discussed with the physician as soon as possible.

CLONAZEPAM

Clonazepam (Klonopin®) is used to control absence attacks. Drowsiness is common when starting this medication, but usually lasts less than a week. Persistent, severe drowsiness, dizziness, or unsteadiness should be discussed with the physician as soon as possible.

GABAPENTIN

Gabapentin is a relatively new agent which goes by the brand name Neurontin®. It can be used for partial seizures and secondarily generalized seizures in adults and may occasionally be used for other seizure types or in children. Most commonly it is added to another anti-epileptic agent when a single agent is not effective.

Gabapentin is somewhat unique among the anticonvulsants because it is primarily eliminated from the body in the urine. The dosage must be reduced if renal insufficiency is present. There are no interactions with other anticonvulsants. Side effects are few but may include sleepiness, fatigue, ataxia (uncoordinated gait), dizziness and gastrointestinal (GI) upset.

FELBAMATE

Felbamate (Felbatal®) is also used for partial seizures and secondarily generalized seizures either as monotherapy or along with another anti-epileptic. It is especially effective for seizures associated with Lennox-Gaustaut syndrome. The most common side effects include irritability, insomnia,

anorexia, nausea and headache. Its use is somewhat limited by two rare but severe side effects. Aplastic anemia is a condition where the bone marrow stops making blood cells making the person susceptible to infection. Aplastic anemia has been reported in over thirty patients taking felbamate, ten of whom died. The incidence is estimated to be between one out of 3600 to 5000 persons exposed to the drug.

Hepatotoxic or liver toxic effects occur at a rate of one in 24,000 to 34,000 persons exposed to felbamate. There have been several deaths from this adverse effect as well. Frequent monitoring of blood counts (for aplastic anemia) and liver function tests (for hepatotoxicity) will probably be ordered by the physician to monitor these possible side effects.

Felbamate also interacts with other anticonvulsants. Valproate increases the serum concentrations and effects of felbamate, while phenytoin and carbamazepine decrease serum concentrations and effect. Felbamate also increases the serum concentration of phenytoin , valproate and carbamazepine expoxide (the active form of carbamazepine). Therefore, the physician needs to be aware of all medications the individual is receiving so that these dosages may be adjusted as needed.

LAMOTRIGINE

Lamotrigine (Lamictal®) is an agent used in combination with other anti-epileptic agents for partial seizures and secondarily generalized seizures. It can also be used as single drug therapy in some people. The most common side effects are rash, dizziness, tremor, ataxia (uncoordinated gait), diplopia (double vision), headache, and GI upset. The rash occurs in about 5% of persons but sometimes goes away with continued therapy. In others, it worsens and the patient develops fever, arthragias (painful joints), and eosinophilia (an increase in a particular blood cell which is often associated with allergic reactions). Rarely, Stevens-Johnsons syndrome, a life threatening exfoliative dermatitis, can occur. Concurrent administration of lamotrigine with valproate may increase the likelihood of developing a rash. Starting at low dosage and gradually increasing the dosage to therapeutic range over several weeks may decrease the chances of developing the rash. Phenobarbital, phenytoin and carbamazepine decrease lamotrigine serum concentrations while valproate increases them.

TOPIRAMATE

Topiramate (Topomax®) is the newest of the anti-epileptic agents. It has antiseizure activity resembling that of phenytoin and carbamazepine, but appears to have additive effects with them. Adverse effects include cognitive difficulties (disturbances in perception, memory and thinking), tremor, dizziness, ataxia (uncoordinated gait), headache, fatigue, GI upset, and renal calculi (kidney stones). These side effects will likely limit its use to those patients who do not respond to other agents. Phenytoin and carbamazepine decrease topiramate serum concentrations. Topiramate may increase phenytoin serum concentration in some patients.

OTHERS

There are several other anti-epileptic agents in clinical trials now which may be available within the next few months or years. When these are first available they will not be in any of the reference books. You will need to get information about these from your pharmacist.

CHAPTER EXAM
V. DRUG INFORMATION 124 - 127

Questions 124-127
Match the side effect with the agent most likely to cause it.

124.	_____Lamotriqine	a. tenderness, swelling and bleeding of gums.
125.	_____Phenobarbital	b. hangover
126.	_____Phenytoin	c. liver toxicity
127.	_____Felbamate	d. rash, sometimes very severe

VI. THE ROLE OF THE TRAINER

NORMALIZATION, RULES, AND LAWS

This manual is intended to provide care givers with information about medications and procedures related to the safe use of these medications. The goal of all staff providing direct services is to promote the health, safety, and personal growth of persons with developmental disabilities. Reducing errors with medications is an important goal, but the student should also have a basic understanding of the applicable State of Montana rules and laws which impact the use of medications.

The concept of normalization is worth reviewing as services to persons with developmental disabilities continue to evolve. Normalization refers to a system of values that ultimately supports the right of persons with developmental disabilities to live, work, and pursue dreams and goals in the same ways as persons who are considered non-disabled. Our sense of self worth and dignity is closely tied to how we are perceived and treated by others. The lifelong acquisition of skills and knowledge which result in greater freedom and independence is important for everyone. Teaching persons to become more independent in taking their own medications is more than just a good idea, however: **It is the law.**

In 1977, the Montana State Legislature passed an amendment allowing non-medical professionals to assist and supervise in the self-administration of medications of persons with developmental disabilities. The critical language of this law follows:

"The Department (Department of Health and Human Services, or DPHHS), shall adopt rules in cooperation with the Board of Nursing under which a properly trained staff member of a facility providing services to developmentally disabled persons under this chapter may assist and supervise a client of the facility in taking medication if the medication is usually self-administered and if a physician has prescribed the assistance (MCA 53-20-204 [2], eff. 1977)."

"Properly trained" refers to a staff person who has passed the medication exam administered by the Developmental Disabilities Program (DDP). This person is considered "med certified." Critical terms are defined as follows:

Assistance: Providing any degree of support or aid to an individual who independently performs at least one component of medication-taking behavior.

Supervision: Critically observing and directing an individual engaged in medication-taking behavior.

Self-administer: To manage/dispense medications by oneself.

The Administrative Rules of Montana (ARM) Section 46.8.109 *Certification of Persons Assisting in the Administration of Medication* summarizes the DDP staff and corperation staff responsibilities in maintaining the agreement between the DDP and the Board of Nursing, enabling non-medical staff to assist in the administration of medications. Key elements include:

1. Non-medical professionals working in DDP-funded facilities must be med certified (pass the medication exam administered by the DDP) before they may assist and supervise in the administration of medications. Persons must be recertified (pass the medication exam) once every two years in order to maintain their med certification.

2. Normally, the use of long-term (more than 10 days) medications requires the implementation of a formal training program plan designed to increase the level of independence of the individual. This requirement may be waived if specific conditions outlined in the rule are met.

3. Medical tasks which may not be delegated to non-medical professionals are outlined in ARM 8.32.1708 and 8.32.1709 (Board of Nursing Rules).

A staff person's responsibilities must be clearly understood. The staff person's role is always to ensure that the daily living needs of individuals are met in a safe and healthy environment. Assisting people in achieving personal growth is a demanding yet potentially rewarding challenge for direct services staff.

TEACHING SELF-MEDICATION SKILLS

Teaching individuals to become more independent in taking their meds remains a critical component of the agreement between the Board of Nursing and the Developmental Disabilities Program enabling non-medical professionals to ensure prescribed medications are taken. The Administrative Rules of Montana require formal training objectives for people who need assistance and supervision in taking medications. Exceptions to this training requirement are outlined in the rule. In essence, the Individual Planning (IP) team can decide to drop the training requirement only after several training approaches have been tried and further progress in achieving the goal of self-medication is not likely.

Many persons in DDP-funded services may never become fully independent in all aspects of self-medication, but progress in achieving and maintaining increased independence is likely if systematic

training approaches are used. This manual will give the reader some basic ideas to consider when developing a training program designed to address a skill deficit. An exhaustive review of potentially useful training techniques is beyond the scope of this manual.

There is a great deal of literature and many curricula available to DDP-funded service providers responsible for increasing the skills of persons with developmental disabilities. The Developmental Disabilities Client Programming Technician (DDCPT) and the Institute for Applied Behavior Analysis Competency Based Training (CBT) curricula are excellent resources for information on behavior modification techniques designed to enhance skill acquisition. These curricula may be available from your training specialist, through the TRIC/PLUK Library, or from the Developmental Disabilities Program regional or state office. Behavior modification techniques are widely used to teach new skills to persons in the Developmental Disabilities (DD) service system.

Behavior modification includes the following premises:

1. Behaviors which are immediately followed by "positive events" (praise, money, tasty food or drink, etc.) will be more likely to occur again. This is called the principle of positive reinforcement.

2. Teaching small components of complex skills will create more opportunities for success and increased rates of positive reinforcement. Breaking complex behaviors into smaller components (steps) is referred to as "task analysis." The written protocol listing the program steps is often called a "TA."

There are some minimum standards outlined in the Administrative Rules of Montana Section 46.8.109 for formal training programs designed to teach self-medication behaviors. These requirements include the necessity for staff to maintain a medication log and for program data to be collected daily, enabling the program reviewers to determine the trainee's level of progress.

One effective measure of progress is the degree to which a person can perform a skill independently. The schematic on the following page represents an example of a task analysis and a data collection method for measuring the degree to which a person can perform a skill independently. A reduction in the overall level of trainer prompting needed by the trainee to complete the behavior indicates progress. This is reflected in an increase in the independence percentage scores over time.

Target Behavior: Susan will independently fill and drink a cup of water with her afternoon dosage of anti-epileptic medications when given her pills in a med cup.

Trainee: _____ Target Behavior: _____

Trainer: _____ _____

Criterion: 100%/3 consecutive sessions

STEPS	DATES																											
	5/1/98			5/2/98			5/3/98			5/4/98			5/5/98			5/6/98			5/7/98			5/8/98		
PICK UP CUP	I		4	I		4	I		4	I		4	I		4	I		4	I		4	I		4
	V	✓	3	V		3	V		3	V		3	V		3	V		3	V		3	V		3
	G		2	G		2	G		2	G		2	G		2	G		2	G		2	G		2
	M		1	M		1	M		1	M		1	M		1	M		1	M		1	M		1
	P		0	P		0	P		0	P		0	P		0	P		0	P		0	P		0
TURN ON COLD WATER	I		4	I		4	I		4	I		4	I		4	I		4	I		4	I		4
	V		3	V		3	V		3	V		3	V		3	V		3	V		3	V		3
	G	✓	2	G		2	G		2	G		2	G		2	G		2	G		2	G		2
	M		1	M		1	M		1	M		1	M		1	M		1	M		1	M		1
	P		0	P		0	P		0	P		0	P		0	P		0	P		0	P		0
FILL CUP WITH WATER	I		4	I		4	I		4	I		4	I		4	I		4	I		4	I		4
	V	✓	3	V		3	V		3	V		3	V		3	V		3	V		3	V		3
	G		2	G		2	G		2	G		2	G		2	G		2	G		2	G		2
	M		1	M		1	M		1	M		1	M		1	M		1	M		1	M		1
	P		0	P		0	P		0	P		0	P		0	P		0	P		0	P		0
TURN OFF WATER	I	✓	4	I		4	I		4	I		4	I		4	I		4	I		4	I		4
	V		3	V		3	V		3	V		3	V		3	V		3	V		3	V		3
	G		2	G		2	G		2	G		2	G		2	G		2	G		2	G		2
	M		1	M		1	M		1	M		1	M		1	M		1	M		1	M		1
	P		0	P		0	P		0	P		0	P		0	P		0	P		0	P		0
PUT PILL IN MOUTH	I		4	I		4	I		4	I		4	I		4	I		4	I		4	I		4
	V	✓	3	V		3	V		3	V		3	V		3	V		3	V		3	V		3
	G		2	G		2	G		2	G		2	G		2	G		2	G		2	G		2
	M		1	M		1	M		1	M		1	M		1	M		1	M		1	M		1
	P		0	P		0	P		0	P		0	P		0	P		0	P		0	P		0
DRINK 1/4 OR MORE OF WATER AND SWALLOW PILL	I	✓	4	I		4	I		4	I		4	I		4	I		4	I		4	I		4
	V		3	V		3	V		3	V		3	V		3	V		3	V		3	V		3
	G		2	G		2	G		2	G		2	G		2	G		2	G		2	G		2
	M		1	M		1	M		1	M		1	M		1	M		1	M		1	M		1
	P		0	P		0	P		0	P		0	P		0	P		0	P		0	P		0
TOTAL	79%																											

KEY: I = Independent (no prompt needed)
V = Verbal prompt
G = Gestural prompt (may be used with verbal prompt)
M = Modeling prompt (may be used with verbal or gestural prompts)
P = Physical prompt (may be used with verbal, gestural, or modeling prompts)
% Independence Score: Reflects total points earned (numerator) divided by total points possible (denominator)

INSTRUCTIONS: Trainer will record the most restrictive (lowest point value) prompt used to complete each step.

The preceding training strategy is one of many ways to train a skill and to document program progress. The "level of independence" data collection method could serve to alert the program reviewer of troublesome steps which may need to be modified. It is not always necessary to teach medication skills using task analysis and data collection for each step. There are many ways to achieve the same end result.

A good idea for ensuring that skills are maintained is to develop a medication protocol which outlines the expected behaviors for both the teacher and the trainee when it's time for meds. Some staff may want to help the person by doing things for the person that he or she already knows how to do. It may be faster or more convenient, especially if the trainee is slow. Unfortunately, this can result in the loss of skills. New staff may be unsure of what the individual is capable of doing. A brief medication protocol for each person inserted in the med log can help ensure that previously learned skills are maintained.

Training should be fun. A good teaching strategy is enjoyable for the staff person and the individual. The best techniques for teaching will result in the trainee getting a lot of positive staff interaction (often a strong reinforcer by itself) and frequent rewards. Rewards (reinforcers) should be meaningful; let the trainee have input in the selection of what he/she would like to work for. If the training session isn't fun for the individual, it's time to change the program—or maybe try some new reinforcers. Be creative. Ask for help. The chances are good that someone from within your agency is very experienced in developing teaching strategies, task analyses, and data collection methods that will increase the likelihood of success in teaching new skills.

MANAGING MEDICATIONS
APPENDICES

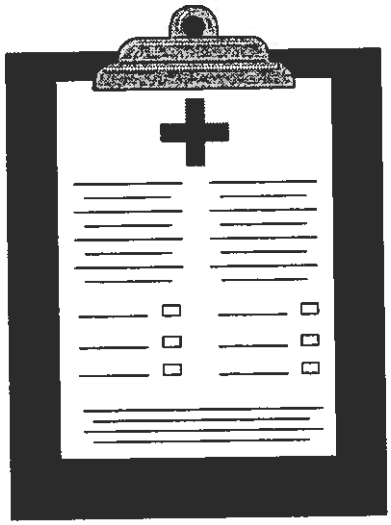
A: ANSWERS TO CHAPTER EXAMS

B: GLOSSARY

C: COMMONLY USED ABBREVIATIONS ON PRESCRIPTIONS

D: INSTRUCTIONS FOR SPECIFIC DOSAGE FORMS

E: SAMPLE DOCUMENTATION FORMS



APPENDIX A

ANSWERS TO CHAPTER EXAMS

I. INTRODUCTION

(pg. 4)

1. False
2. *The Essential Guide to Prescription Drugs*
3. pass a test
4. self-instructional
5. teacher
6. go back and reread the section
7. health professionals

II. OTHER SOURCES OF INFORMATION

(pg. 6)

8. 1). General background information on drugs.
   2). Guidelines for medication procedures for you as a care giver for individuals with developmental disabilities.
   3). Some specific information about specific groups of medications most commonly used for consumers.
   4). Drug information which is specific to consumers.
9. pharmacist
10. pharmacist (or physician or registered nurse)

III. ROLE OF THE CARE GIVER IN DRUG THERAPY

(pg. 8)

11. pharmaceutical
12. medicine, poison
13. therapeutic
14. side effects, adverse reactions or untoward effects
15. a, c, d

IV. MEDICATION USE

(pg. 11)

16. True
17. False: Medications rarely cure, rather they eliminate the symptoms of the disease.
18. 1). Generic
    2). Brand or trade name
19. Active ingredient
20. Specific product of a company
21. False, the pharmacist may substitute a generic product
22. True
23. Over-the-counter or nonprescription drugs
24. False, same illness or not, never take or give someone another person's prescribed drugs
25. False, you must have an order for any medication, legend or OTC
26. Environmental conditions, convenience, and security/access
27. Moisture, air, time, heat, and light
28. True, because of the moisture and warmth of a bathroom
29. 59°F to 86°F or room temperature
30. 1). Keep out of harm's way
    2). Keep dry and cool
    3). Destroy all unused medications
    4). Don't freeze liquid medication; and
    5). Always keep lid closed
31. Generic
32. Trade name
33. False
34. False
35. True
36. False

(pg. 15)

37. True
38. c
39. Read the label when picking up the container, removing medication, and replacing the cap.
40. Patient name, medication name, dosage
41. b

42. False
43. Topically
44. False
45. True
46. True
47. True
48. True

(pg. 17)

49. 1). Purpose of medication
    2). How much/how often/dosage
    3). Can it be taken with meals
    4). How long is it to be taken
    5). Are there any special storage instructions
    6). What side effects
    7). Drug interactions
    8). When to return for monitoring or lab testing.
50. True
51. Side effect
52. False, side effects from a drug can be very serious and dangerous.
53. True
54. False, any and all medication errors should be documented in the record.
55. d
56. True
57. Monitoring
58. Serious (or crucial)

(pg. 19)

59. 1). Name of person receiving medication
    2). Name of medication
    3). Amount taken
    4). Name of staff providing assistance
    5). Date and time of administration.
60. False, never erase the error, always circle it, write error next to it and your initials.
61. "When needed" or "as needed."
62. When a medication is to be given only under certain circumstances rather than on a regular schedule.
63. The drug, dosage size, dosage form (if available in more than one), dosage frequency, and criteria on when to use it.

V. DRUG INFORMATION

(pg. 20)

64. Disease
65. Drugs
66. Receptors
67. False, the desired effect is called the therapeutic effect.
68. a
69. b
70. a
71. c

(pg. 25)

72. False
73. True
74. False
75. False
76. True
77. 1). Rule out other causes for the behavior before using medications.
    2). Collect baseline data.
    3). State a reasonable hypothesis for the basis of the medication you choose.
    4). Intervene in the least intrusive and most positive way.
    5). Monitor for adverse drug reaction.
    6). Collect outcome data.
    7). Start low and go slow—lower doses minimize effects.
    8). Periodically consider gradual dosage reduction.
    9). Maintain active treatment objectives.
    10). Maintain optimal functional state.
    d

(pg. 29)

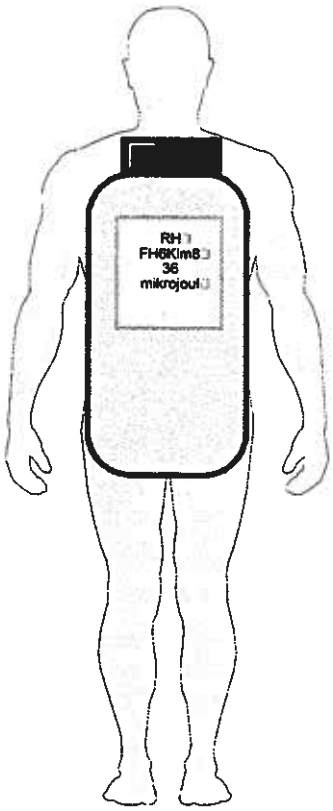
78. c
79. f
80. a
81. j
82. d
83. b
84. h
85. g
86. l
87. k
88. e
89. i
90. 1). No drug works for every infection.
    2). These drugs limit the infection, the body eliminates the organism.

(pg. 35)

91. Brain and the spinal column
92. Impulses (or messages) excitatory
93. a. Inhibitory
    b. Go
94. Inhibitory
95. Seizure
96. True
97. Seizure disorder
98. Symptom
99. Focal (or partial) and generalized
100. Specific neurons (or area in the brain) are malfunctioning
101. Partial complex (or psychomotor or temporal lobe)
102. A warning that a seizure is coming; an unusual or peculiar sensation, smell, or feeling before a seizure.
103. True
104. Generalized tonic/clonic
105. Petit mal (or minor motor)

(pg. 36)

106. c
107. b
108. a
109. d
110. True
111. True
112. False, they are most often used to prevent seizures.
113. Call a doctor or emergency number immediately.
114. Anticonvulsants
115. False
116. True
117. False
118. True
119. True
120. False
121. True
122. False
123. False



(pg. 41)

124. d
125. b
126. a
127. c

APPENDIX B

GLOSSARY

ABSENCE ATTACK (Also called **MINOR MOTOR** or **PETIT MAL SEIZURE**): a type of generalized seizure characterized by a sudden, brief clouding of consciousness (without falling or muscular manifestations), most often seen in children

ANTICONVULSANT (Previously referred to as an "**anti-epileptic**"): a drug used to prevent or reduce the frequency of seizures.

ASSIST: To give support or aid in the self-administration of medication.

AURA: A peculiar feeling, smell, sound, taste, or other sensation that frequently precedes, by a few seconds, the onset of a partial complex seizure.

AUTOMATISM: Repetitive, rhythmic, purposeful movement (such as lip-smacking, swallowing, walking aimlessly, or picking at one's clothing) that sometimes accompanies a partial complex seizure.

BRAND NAME (Also called **TRADE NAME**): The specific name of a particular product (such as a drug) that can be used only by the company that registers that name.

CENTRAL NERVOUS SYSTEM: The brain and the spinal column; the system that carries the impulses (messages) that allow the body to function.

CLONIC: The phase in a generalized tonic/clonic seizure in which the muscles alternately tense and relax.

EPILEPSY: See **SEIZURE DISORDER**

EXCITATORY: The neuron's "go" message; the process that occurs when neuron cells are passing impulses from one to another.

FOCAL (PARTIAL) SEIZURE: A seizure that begins in a small, localized part of the brain and remains there or spreads slowly to other parts of the brain.

FOCAL MOTOR SEIZURE: A type of focal seizure in which an outburst of neural activity in the brain causes the contraction of a group of muscles.

GENERALIZED TONIC/CLONIC SEIZURE (Also called **GRAND MAL SEIZURE**): The most common type of seizure, its first outward signs involve the entire central nervous system and are visible (generalized) throughout the body.

GENERIC NAME: The name of the active ingredient in a drug.

GRAND MAL SEIZURE: See **GENERALIZED TONIC/CLONIC SEIZURE**

IDIOPATHIC: Any seizure disorder with an unknown cause.

INHIBITORY: The neuron's "stop" message; the process whereby neurons keep impulses from passing along.

ISOLATED SEIZURE: A seizure caused by a temporary environmental or physical condition, and which is not likely to recur.

MINOR MOTOR SEIZURE: See **ABSENCE ATTACK** or **PETIT MAL SEIZURE**

NEURON: The basic working unit within the central nervous system whose function is to transmit messages (impulses).

NUISANCE SIDE EFFECT: An unintended drug effect which is inconvenient but not harmful, and which usually disappears within a week.

NORMALIZATION: The right and opportunity of persons with disabilities to live and work as much like non-disabled persons as possible.

PARTIAL COMPLEX SEIZURE (Also called **PSYCHOMOTOR** or **TEMPORAL LOBE SEIZURE**): A type of focal seizure lasting ½ to 2 minutes and characterized by automatisms, changes in behavior, and loss of conscious contact with the environment.

PETIT MAL SEIZURE: See **ABSENCE ATTACK** or **MINOR MOTOR SEIZURE**

PROMPT: Assistance that a teacher can give clients when they can not do tasks on their own (e.g., verbal instructions, gestures, modeling, physical guidance).

PSYCHOMOTOR SEIZURE: See **PARTIAL COMPLEX SEIZURE**

REINFORCER: Any object or event that follows a behavior and increases the future occurrence of that behavior.

SEIZURE: Uncontrolled bursts of neural activity that temporarily disrupt body functioning.

SEIZURE DISORDER (Also called **epilepsy**): A condition in which a person may continue to have seizures throughout her/his life (unless controlled by anticonvulsants), and which is caused by some known or unknown physical cause.

SELF-ADMINISTER: To manage or dispense one's own medication to oneself.

SIDE EFFECT: An unintended effect of a drug (see also **NUISANCE, SPECIAL,** and **TOXIC SIDE EFFECTS**).

SPECIAL SIDE EFFECT: An unintended drug effect that is characteristic of a specific medication.

SUPERVISE: To critically watch and direct a client in the self-administration of medication.

TEMPORAL LOBE SEIZURE: See **PARTIAL COMPLEX SEIZURE.**

TONIC: The phase in a generalized tonic/clonic seizure in which the muscles are flexed (tensed)

TOXIC SIDE EFFECT: An unintended drug effect which results from an excesive dosage.

TRADE NAME: See **BRAND NAME**

APPENDIX C

COMMONLY USED ABBREVIATIONS ON PRESCRIPTIONS

ac ..... before meals

ad ..... right ear

al ..... left ear

au ..... each ear

bid ..... two times a day

cap ..... capsule

c ..... with

cc ..... cubic centimeter

d ..... daily

gtt(s) ..... drop(s)

h ..... hour

ha ..... headaches

im ..... intramuscular

ml ..... milliliter

NR ..... no refill

od ..... right eye

os ..... left eye

ou ..... both eyes

oz ..... ounce

pc ..... after meals

po ..... per os, by mouth

pr ..... per rectum

prn ..... as needed

qam ..... every morning

qpm ..... every afternoon/evening

qhs ..... every bedtime

qd ..... every day

qid ..... four times a day

qod ..... every other day

Rx1 ..... refill once

s ..... without

sc ..... subcutaneously

sig ..... signatura/directions

supp ..... suppository

T ..... tablespoonful

tab ..... tablet

tsp ..... teaspoonful

tid ..... three times a day

TPR ..... temperature, pulse, respiration

ut.dict. ..... as directed

ung ..... ointment

5cc ..... one teaspoonful

..... number

ii ..... two

i ..... one

iii ..... three

ss ..... one-half

APPENDIX D

INSTRUCTIONS FOR SPECIFIC DOSAGE FORMS

EYE DROPS

Eye drops are most often used for local effect. Be sure to place them in the correct eye. In some cases, drops may be placed in both eyes. Follow the directions carefully. Check the label to see if the bottle needs to be shaken before use.

1. Wash hands.

2. Eye drops may come in a bottle with a dropper usually built into the cap or as a plastic bottle with a dropper built in as part of the bottle. If there is a dropper, keep the bottle upright to prevent the liquid from flowing into the dropper bulb. If the dropper is part of the bottle, it will be necessary to invert the bottle to get the liquid to the dropper mechanism.

3. Ask the person to be seated and have him/her tilt his/her head back slightly and look up at the ceiling.

4. Using one hand, gently pull down on the lower eyelid to form a pouch.

5. Using the other hand, place your palm on the person's forehead to use as a support. Hold the dropper or dropper bottle between the thumb and index finger of this hand. Hold the end of the dropper about an inch above the eye, being careful not to touch anything with the dropper.

6. Gently squeeze the dropper to instill the prescribed number of drops into the pouch of the lower lid. Do not drop onto the eye itself.

7. Ask the person to close their eye for one or two minutes to allow the medication to be distributed around the eye and to be absorbed. It is best not to blink.

8. Repeat the procedure in the other eye, if so directed.

9. Replace the cap tightly.

EYE OINTMENT

Eye ointments are most often used for local effect. Be sure to place them in the correct eye. In some cases, the ointment may be placed in both eyes. Follow the directions carefully.

1. Wash hands.

2. Remove the cap from the ointment tube.

3. Ask the person to be seated and have him/her tilt his/her head back slightly and look up at the ceiling.

4. Using one hand, gently pull down on the lower eyelid to form a pouch.

5. Using the other hand, place your palm on the person's forehead to use as a support. Hold the ointment tube using the thumb and index finger of this hand. Hold the end of the ointment tube just above the lower lid, being careful not to touch anything with the tube.

6. Gently squeeze the tube and move it along the lower lid to instill a one centimeter (about one-third inch) thread into the pouch of the lower lid. Do not place onto the eye itself.

7. Ask the person to close their eye for one or two minutes to allow the medication to be distributed around the eye and to be absorbed. It is best not to blink.

8. Repeat the procedure in the other eye, if so directed.

9. Wipe the applicator tips with a clean tissue and replace the cap tightly.

SKIN PATCHES

Usually skin patches are designed for medication to be absorbed through the skin for systemic effects. The medication is gradually released over time to provide a long lasting effect, sometimes for several days. Be sure to follow the directions on the label.

1. Wash and glove hands. Be careful not to get medication on your skin as it will be absorbed.

2. Remove the previous patch before applying the new one. Wash the area to remove any remaining medication or adhesive.

3. Select an area to which the new patch is to be applied. The area should have little or no hair and be free of scars, cuts, or irritation. The location of the patch should be changed each time to prevent skin irritation.

4. Clean the area with soap and water and dry it.

5. Remove the outer wrapping and the covering over the adhesive ring and stick the patch to the skin.

6. Do not trim or cut the patches. These patches are designed to gradually release the medication. Cutting them damages the dosage form and changes the rate of medication release.

7. Bathing can be done with the patch in place. It is best to try to minimize the trauma to the patch. If a patch comes off prematurely, discard it and place a new patch.

NASAL (NOSE) DROPS

1. Have the person blow his/her nose gently, without squeezing, just before using the drops.
2. Ask the person to lie down and tilt his/her head back slightly.
3. Remove the cap. Hold the end of the dropper or dropper bottle just above the nostril, being careful not to touch anything with the dropper.
4. Gently squeeze the dropper to instill the prescribed number of drops into the nostril.
5. The person should remain lying for one or two minutes to allow the medication to be absorbed.
6. Repeat the procedure for the other nostril if so directed.
7. Rinse the dropper with water after each use to prevent contamination.

NASAL (NOSE) SPRAY

1. Have the person blow his/her nose gently without squeezing just before using the drops.
2. Ask the person to sit down and hold his/her head straight up.
3. Remove the cap. Insert the nozzle (nosepiece) of the spray bottle gently into the nostril
4. Squeeze the bottle firmly and quickly while at the same time having the person sniff briskly to instill each spray of medication.
5. Ask the person to try to avoid sneezing for one or two minutes to allow the medication to be absorbed.
6. Repeat the procedure for the other nostril if so directed.
7. Rinse the nozzle with water and wipe dry with a clean tissue after each use to prevent contamination.
8. Replace cap.

EAR DROPS

Ear drops are most often used for local effect. Be sure to place them in the correct ear. In some cases, drops may be placed in both ears. Follow the directions carefully. Check the label to see if the bottle needs to be shaken before use.

1. Wash hands.
2. Be sure medication is at room temperature before administering.
3. Ask the person to lie down on their side with the affected ear up.
4. Remove the cap.
5. Gently pull the earlobe upward and toward the back of the head to align the ear canal.
6. Hold the end of the dropper near the ear canal, being careful not to touch anything with the dropper.
7. Squeeze the dropper or dropper bottle to instill the prescribed number of drops in the ear.
8. Ask the person to remain lying for one or two minutes to allow the medication to be absorbed.
9. Repeat the procedure for the other ear if so directed.
10. Wipe the dropper with a clean tissue and replace the cap tightly.

CREAMS/LOTIONS/OINTMENTS FOR USE ON THE SKIN _____

1. Wash and glove hands.

2. If a lotion, shake the bottle until the medication is completely resuspended.

3. Gently clean the old medication from the affected area. Use water, hydrogen peroxide, or a cleansing solution prescribed by the physician. Be careful not to cause irritation or tear irritated skin.

4. Apply a thin layer over the entire affected area. You may use a wooden tongue depressor, a cotton-tipped applicator or a gloved finger. Do not rub it in unless so directed. Use caution not to cause further damage to the area.

5. Affix a dressing only if recommended by the prescriber.

AEROSOL FOR THE SKIN

1. Clean the affected area.

2. Shake the container before application.

3. Hold the container about six inches away from the skin. Some containers need to be held upright, others need to be held upside down. Check the label.

4. Spray over the area in short one to three second bursts. Use caution to avoid spraying into the eyes, nose or mouth.

RECTAL SUPPOSITORIES

1. Wash and glove hands.
2. Ask the person to lie down on their side.
3. Remove the foil wrap from the suppository.
4. Moisten the suppository with water.
5. Insert the pointed end of the suppository into the rectum and push the suppository well into the rectum.
6. Remind the person to try to retain the suppository. It may be necessary to hold the buttock together for a few minutes to allow the suppository to dissolve and be absorbed.
7. If the suppository is too soft to be inserted, run cold water over it or place it in the refrigerator for several minutes before removing the foil wrap.

VAGINAL SUPPOSITORY

1. Wash and glove hands.
2. Remove suppository from clear plastic package by peeling back protective foil closure. Moisten suppository in warm water for a second or two.
3. Pull out plunger (inner rod) of plastic inserter until it stops.
4. Place smaller, pointed end of suppository snugly into open end of inserter.
5. Grasp barrel (outer cylinder) of inserter, at the bottom, with thumb and middle finger.
6. Ask the person to lie on their back with their knees raised.
7. Gently push inserter into the vagina as far as it will go comfortably without using force. With forefinger, depress plunger all the way down to insert suppository into vagina.
8. Carefully remove inserter from vagina, holding it by the barrel.
9. It is recommended that a pad be used to prevent staining of clothing.
10. Wash inserter with warm, soapy water (do not boil). For easy cleaning, it may be disassembled by pulling plunger apart from barrel. Rinse and dry.

VAGINAL OINTMENT

1. Wash and glove hands.

2. Remove cap from tube. Screw applicator to tube.

3. Pull out plunger (inner rod) of plastic inserter until it stops.

4. Hold tube with applicator pointing down. Squeeze tube, forcing contents into cylinder until it is full. Then remove applicator from tube.

5. Ask the person to lie on their back with their knees raised.

6. Hold filled applicator by cylinder and gently insert it into the vagina as far as it will go comfortably. Press plunger and deposit ointment into the vagina. While keeping plunger depressed, remove the applicator from vagina.

Care of the Applicator

1. After each use, take applicator apart and wash with soap and warm water. To take apart, hold cylinder of plunger and turn cap counterclockwise.

2. To reassemble, drop plunger back into cylinder as far as it will go. Place cap on end of plunger and turn clockwise until cap is tight.

RECTAL OR HEMORRHOIDAL OINTMENT

1. Wash and glove hands.

2. Remove cap from the ointment tube and attach the applicator to the tube

3. Insert it well up into the rectum.

   In the presence of painful hemorrhoids or anal fissures, you may want to cover the tip of the applicator with the ointment or petroleum jelly (Vaseline®) to help ease it into the rectum.

4. After each use remove the applicator from the tube, and clean it thoroughly. Be sure to replace the cap on the tube.

METERED DOSE INHALER

1. Remove the cap and hold inhaler upright.

2. Shake the inhaler.

3. Tilt head back slightly and breathe out.

4. Position the inhaler in one of the following ways:

   a. Open mouth with inhaler 1-2 inches away;
   b. Use spacer (this is recommended especially for young children);
   c. In the mouth.

   "a" is optimal, but "c" is acceptable for those who have difficulty with "a" or "b"

5. Press down on inhaler to release medication as the person starts to breathe in slowly.

6. Have the person breathe in *slowly* (3-5 seconds).

7. Ask the person to hold his/her breath for 10 seconds to allow medicine to reach deeply into lungs.

8. Repeat puffs as directed. Waiting one minute between puffs may permit second puff to penetrate the lungs better.

9. Spacers are useful for all patients. They are particularly recommended for young children and older adults and for use with inhaled steroids.

10. Rinsing the mouth and throat with water after each use helps to prevent dry mouth and systemic absorption.

APPENDIX E
SAMPLE DOCUMENTATION FORMS

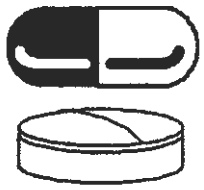
INCLUDING

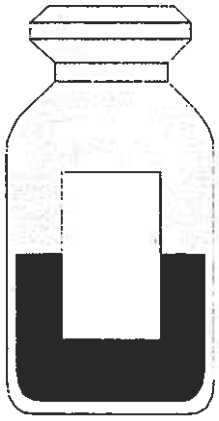
Medical Log

Medication Change Form

PRNs and Missed Dose Documentation

Medical Information Exchange





MEDICATION CHART

NAME:	BIRTHDATE:
ALLERGIC TO (record in red):	SPECIAL DIET:

MEDICATION (1):	DR:	DIAGNOSIS:

DAY	HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
DOSE:																																
FREQ:																																
ROUTE:																																
START:																																
STOP:																																

RESPONSE TO MEDICATION (1):

MEDICATION (2):	DR:	DIAGNOSIS:

DAY	HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
DOSE:																																
FREQ:																																
ROUTE:																																
START:																																
STOP:																																

RESPONSE TO MEDICATION (2):

MEDICATION (3):	DR:	DIAGNOSIS:

DAY	HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
DOSE:																																
FREQ:																																
ROUTE:																																
START:																																
STOP:																																

RESPONSE TO MEDIC[illegible]):

MEDICATION (4):	DR:	DIAGNOSIS:

DAY	HOUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
DOSE:																																
FREQ:																																
ROUTE:																																
START:																																
STOP:																																

RESPONSE TO MEDICATION (4):

SIGNATURE:	INT:	SIGNATURE:	INT:	MONTH/YEAR
SIGNATURE:	INT:	SIGNATURE:	INT:	
SIGNATURE:	INT:	SIGNATURE:	INT:	

Spring Meadow Resources, Inc.

MEDICATION CHANGE FORM

To be completed by SMR staff when medication is
first prescribed or when prescription changes

Name: _____

Date: _____ Medical Provider: _____

Staff Person Writing Report: _____

Is this a new medication? yes____ no____
OR
Dosage change of current medication only? yes____ no____

Medication, dosage, and instructions: _____

_____

_____

_____

Start Date: _____

Stop Date: _____ or ongoing? yes____ no____

Purpose of Medication: _____

_____

_____

_____

Is this medication replacing a medication that is to be discontinued? yes____ no____

Medication to be discontinued: _____

Date to be discontinued: _____
(Discontinued medications are to be submitted to the Health/Environment Specialist within 24 hours of discontinuation.)

Other instructions or information: _____

_____

_____

_____

If person served attends a day service, this form MUST be forwarded to the day service by the staff person completing it.

cc ____Health/Environmental Specialist ____Hab Tech II ____Day Service

PRNs and MISSED DOSE DOCUMENTATION

DATE & TIME	MED & DOSAGE	REASON	RESULTS OR RESPONSE	MED ERROR REPORT?	STAFF SIGNATURE

INITIALS	STAFF SIGNATURE	INITIALS	STAFF SIGNATURE

MEDICAL INFORMATION EXCHANGE

CONSUMER'S NAME: _____

DATE: _____ TIME OF DAY: _____

Name of staff person completing this form: _____

WHAT HAS THE CONSUMER REPORTED TO YOU ABOUT THE WAY THEY FEEL?

_____

_____

_____

_____

WHAT SIGNS OR SYMPTOMS HAVE YOU OBSERVED?

_____

_____

_____

_____

WHAT PERSON FROM WHICH AGENCY DI[illegible]U CONTACT REGARDING THIS SITUATION?

_____

_____

_____

_____

WHAT WAS THE AGREED UPO[illegible]COURSE OF ACTION?

(Include time and lo[illegible]transfer of consumer/responsibility)

_____

_____

_____

_____

VOCATIONAL STAFF SIGNATURE: _____

(Please sign at the time of exchange)

RESIDENTIAL STAFF SIGNATURE: _____

(Please sign at the time of exchange)

Department of Public Health & Human Services

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